The Builder.

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ILLUSTRATIONS.

A Sketch Design for a Modern Anglican Cathedral: (No. 53 in the Liverpool Cathedral Competition) Elevation and Plan ..... By Professor Beresford Fite, F.R.I.B.A.
Do. Do. Sections ..... By Professor Beresford Fite, F.R.I.B.A.
Design for a Frieze: "The Canterbury Pilgrims" ..... By Mr. W. A. Chase.

Blocks in Text.

High-street, Campden ..... Page 340
A House in Campden ..... " 340
The Guild Workshops, Campden ..... Page 340
Diagram of Ellipses Drawn by the Aid of String ..... " 348

CONTENTS.

Mural Decoration 335
The Cork International Exhibition 337
Notes 337
The Guild of Handicraft Exhibition 339
The Architectural Association 340
Manchester Society of Architects 340
Association of Municipal and County Engineers 343
An Architectural Exhibition in New York 344
The London County Council 344
Architectural Societies 346
Illustrations:—
A Sketch Design for a Modern Anglican Cathedral 346
Design for a Frieze: the Canterbury Pilgrims 346
Engineering Societies 347
Competitions 347
London Topographical Society 347
Correspondence:—
Drawing an Ellipse 348
A Noisy Floor 348
Applications under the 1894 Building Act 348
The Student's Column.—The Chemistry of Building Materials—8 349
Obituary 349
General Building News 349
Foreign 351
Miscellaneous 351
Recent Patents 353
Meetings 353
Some Recent Sales of Property 353
Prices Current of Materials 354
Tenders 354

Mural Decoration.

FIFTY years ago hardly anything was heard in England of mural decoration; it was not only a lost art but almost a lost idea. Early in the century, indeed, Stothard was commissioned to paint his large picture of Antony and Cleopatra on the staircase wall of Burleigh House—a highly creditable work for the period at which it was executed; but it was a most exceptional commission at the time, nor did the painter, as far as we remember, receive any other of the same kind. One ought not to forget, also, previous to that date, the decoration of the walls of the Lecture Theatre of the Society of Arts by Barry, the *protégé* and friend of Burke, which still remains to show how little the art was understood at the time; though it is, in this sense, of a certain historical interest. The well-intended but hardly successful attempt at the Houses of Parliament showed that much still remained to be learned not only in regard to the method of execution but also to the æsthetics of mural decoration. During the last quarter of a century far more attention has been paid to the subject and an increasing number of opportunities are offered to artists, though in the latter respect we are still far behind France, where the decoration of any important building with mural paintings is almost a matter of course, and the building is considered incomplete without it; the decoration may be postponed for want of funds, but it is always regarded as a work to be done sooner or later. In England there is no such idea of it as a necessary complement to the architecture; but we have got to the point of thinking of it as a thing to be encouraged.

Simultaneously there has grown up in this country a perception that there is such a thing as a decorative element in painting and sculpture; that their object is not only to represent scenes, persons, or incidents, but to represent them in a decorative manner. The English public generally, even the better-educated portion, have not come to this idea as yet; they still regard a painting or a piece of sculpture almost entirely in relation to the question whether it satisfies their idea of what the scene or the personage was actually like. On the other hand, some artists and most writers on art, at the present moment, have gone so far ahead in this direction, that they seem to have come to regard painting and sculpture as nothing if not decorative; not merely that it must have decorative quality (which all painting should have), but that it must actually be a decoration; that the highest function of these arts is to form decoration subordinate to architecture.

As the English public are so slow to take up the decorative idea, it may be desirable that at present it should be rather over-emphasised and thrust upon them; a little exaggeration is wholesome in furtherance of a subject much neglected. But on the other hand we have no doubt that this current language of art-criticism, which would reduce the arts of painting and sculpture to the subordinate position of being merely decorative arts, is a mistake and rests on a confusion of ideas between a picture or a statue which is "decorative" and one which is a decoration.

This is evident in the illustrated treatise recently published by Mr. Lys Baldry,* on the subject of modern mural decoration. In the first place the word "decoration" seems to be applied here in two senses. Mr. Baldry says that people think that "the designer does not rank with the picture painter . . . and they would condemn as a piece of unwarrantable assumption any demand of the decorator to be treated as a person of importance in the art world, and they would relegate decoration to the subordinate place which it seems to them to deserve." Well, in the usual and obvious sense of the word "decoration" they would surely be right. Decoration is generally understood to mean ornamental design to relieve a surface or a structure; such as a wall-paper design or the carving or inlay on a piece of furniture. Figure painting and figure sculpture, even when used as decoration, are surely not to be classed under the same title as ornamental design; they have a higher meaning and they demand higher powers in the artist. The nomenclature may be inadequate and awkward, but we should say that these two classes of art should be distinguished as "decoration" on the one hand, and "decorative painting" or "decorative sculpture" on the other hand. Things so essentially different cannot be classed together under the same term. Then we have a third distinction, for which also a convenient nomenclature is wanting, between decorative painting and sculpture, and painting or sculpture which, though not used as decoration, possess decorative quality; which is merely to say that they are pleasing in line and composition as well as in intellectual quality of expression; such works are those which are not "decorative" in the sense that they are used as decoration to a building, but only in the sense that they are beautiful in themselves; they are things that stand alone, and are not dependent on their position on a wall. This is just what Mr. Baldry and various other contemporary writers on art do not seem to recognise. To say that "whatever the form of expression—painting, sculpture, or design, it is the presence in it of the true decorative quality which determines its right to serious consideration" is putting the matter the wrong way. It would be more correct to say that "without decorative quality it has no claim to serious attention"; *i.e.*, that is one quality which it must have; but it may have that and yet not be worth very serious attention. As evidence of this one may cite some at least of the late Mr. Albert Moore's pictures—his soulless and brainless female figures, always decorative, but often nothing more. And then again we read that "if the classic masterpieces of any school or period are analysed it will be found that their greatness in each instance is in exact proportion to their decorative quality." Is Millais' "Vale of Rest" a picture depend-

* "Modern Mural Decoration." By A. Lys Baldry. London: George Newnes. 1902.

ing for its greatness on its decorative quality? or his "St. Agnes Eve"? or Walker's "The Plough"? But Mr. Baldry's argument apparently will not be disturbed by the instance of Millais, for on another page we observe that "the artists to whom we owe what is best in the record of the nineteenth century" are — Puvis de Chavannes, Albert Moore, Rodin, Alfred Stevens, Gilbert, G. F. Watts, Leighton, F. Brangwyn, and Burne-Jones. Millais was unquestionably the greatest English painter of the nineteenth century—future generations will recognise this if the present one does not; and his name is not thought worth mention! There must be something very much at fault in such a view of art as this.

No: the most intellectually complete work in painting or sculpture has its own individual life and interest, and is worth contemplation for itself alone, not as a portion of a decorative scheme. A work like Titian's "Bacchus and Ariadne" may be said in a sense to be decorative—that is, it has the decorative quality arising from splendid colour and composition; but it is a painted poem in itself, and of more intense and vital interest than any work could be which has to be regarded as a portion of a decorative scheme; you could not reduce it to such a position, since decoration must in a sense be subordinate to the architecture, and such a work cannot be subordinate to any surroundings. So with sculpture; although sculpture even in its most highly wrought forms retains more affinity with architecture, being built, as one may say, of the same materials; still a sculptural work of the highest order demands a position more independent than that of a niche in a building. An architectural background or surrounding it may be all the better for, but it is not to form a mere portion of the building; partly because the highest class of sculpture is emphatically "all-round" work, and requires even for that reason to stand apart. M. Mercié's group of "Gloria Victis" makes, no doubt, an admirable and in a sense a decorative centre to the courtyard in which it is placed in the Paris Hôtel de Ville; but to place it in a niche or framework in the building would be to do it injustice; and even if separated from all building and placed in the middle of a lawn, it would be a work of art quite sufficient unto itself, and worth study for its own sake. So with the best of the sculpture works exhibited from time to time at the Royal Academy; it is quite true that they are not seen to advantage there, but that is because they are in too confined a space and too crowded together, not because they have no architectural setting. Take, for example, such a work as Mr. Toft's "Spirit of Contemplation" in last year's Academy exhibition. That is a work of pure imagination, complete in itself; it would be entirely out of place as an adjunct to architecture; it represents an intellectual conception which cannot take a secondary place in a scheme of decoration.

It is only when we have got rid of this mistaken idea that sculpture and painting cannot stand alone, that we can come to consider rightly their function as decorative arts in connexion with architecture. And in regard to decorative sculpture what is said by Mr. Baldry is perfectly true, viz., that decorative sculpture is worth the attention of the best sculptors, and that there has been recently a great change for the better in the ideas of both architects and sculptors (and to some little extent of the public) on this subject. It is now generally admitted that decorative sculpture which is mere "carving" is not worth having, and that sculptors who are true artists should be employed on any figure sculpture, be it only in panels and friezes, which it is desired to introduce into a building; and sculptors have now so far changed their attitude in regard to architectural sculpture that many of them are not only willing but desirous to put their talent into it. Nevertheless it remains true that the art of sculpture must part with some of its possible intensity and vitality when it is to be employed in a decorative sense as a portion of the structure of a building. Otherwise it will not keep its right place in the scheme; and this holds good not only of conception but of execution. Mr. Baldry expresses an admiration, which we fully share in a sense, for the work of Grinling Gibbons—for its technical mastery and thoroughness of execution. But for all that, Gibbons was not really a decorative artist; his work is not decoration; it does not blend sufficiently with the surroundings; it may be described rather as consisting of a series of brilliantly executed carvings of somewhat incongruous objects, attached to the architectural framework of a door or wainscot, not forming any portion of it. It is no more decoration than the carved knots of foliage on the exterior of St. Paul's are decoration.

Apart from this heresy which we have been combating, that all the best art is necessarily of the nature of decoration, Mr. Baldry's book is both a useful and ornamental publication; the latter in respect of its great number of excellent illustrations. Its usefulness will be rather to the general reader than to artists; it gives information as to the technical difficulties and requirements of various processes of mural decoration, a knowledge of which will very much assist those who are only lovers of art, and not actual workers, in understanding the conditions and the difficulties under which mural decorations are carried out, and therefore in forming a better judgment on the results. Artists who are actually carrying out important works in fresco, or tempera, or mosaic, will of course have already gone through a much more systematic study of the process they are employing than could be embodied in a general and rather popular treatise; but it is very desirable that amateurs should have such a degree of information on the subject as this book affords. The more generally the conditions of mural decoration are understood, the more public interest there will be in the subject; and it is on the degree of public interest in it that the encouragement of decorative art, and the extension of opportunities for it, mainly depend.

In regard to the methods of executing pictorial decoration on walls, there is no question that mosaic is that which best combines with architecture, being itself a kind of built-up work, with materials which are as hard and as permanent as those of the building itself; in fact, as far as resistance to surface wear goes, even more so. For this very reason, however, and also in respect of its somewhat intractable character in regard to gradation of colour and *finesse* in detail, it necessitates, more than any other flat form of mural decoration, the greatest severity of conventional treatment, and any attempt at pictorial effect in this material must be a failure from the very nature of the material, even apart from the question whether pictorial treatment is proper for a wall surface at all. The best mosaic design in figures is rather symbolic, as one may say, than imitative. We agree with Mr. Baldry that mosaic is best placed at some little distance from the eye; we may add that, where possible, it is more effective on a concave surface than on a flat one, on account of the variety of effect got by the different angles at which the light strikes the surface.

When we come from mosaic to methods of work, such as fresco, which allow of a more free style of handling, we are then confronted with the question, How far are we to go in the direction of pictorial effect? And our answer is that realistic effect should be entirely avoided, and that the less there is of receding perspective effect, in general, the better. A mural painting is not to make one forget the existence of the wall (though Ruskin seems to have rather thought it was); it is to give a life and interest to the wall surface. Leighton's two frescoes of the Arts of Peace and War, at South Kensington, show a certain perspective effect in the presentation of an architectural alcove behind the groups of figures; but the whole is kept in its place, in a mural sense, by its exceedingly conventional treatment, which removes it from the category of pictures, in the usual sense of the word. But even this amount of perspective effect is rather risky; and anything like a "distance" is entirely out of place, more especially as fresco in any case is not well able to give the quality of aerial perspective. This is better understood now than it was when the Houses of Parliament frescoes were done; when E. M. Ward, for instance, simply copied one of his own oil paintings into fresco, with a result which is equally a failure in the pictorial and the decorative sense; it is neither the one thing nor the other. The best treatment, when the painting is to be an architectural decoration, is a flat treatment of figures, in which character can be expressed without realism. We publish in the present issue a clever piece of wall decoration by a young artist, which exactly illustrates this; the characters of the personages in the "Canterbury Pilgrims" are very distinctly indicated, but without detaching them from the surface of the wall; it is a procession reduced to mural conditions; and though the artist may sometimes go beyond this severity of treatment, on the whole he is safest in restricting himself to it. The system which the French have introduced, of painting mural pictures on canvas in their studios and having them affixed to the wall afterwards, is mentioned by Mr. Baldry, and the process of fixing described. It is a convenience to the painter, and gets over the technical difficulties incident to fresco painting; but it has the tendency (as is very pointedly shown in some recent French decorative work) of encouraging the artist to elaborate pictorial effects in the studio, which, when the picture is fixed in its

place in the building, are found to be quite out of keeping with the true ideal of mural painting. It is far better that the picture should be painted directly on the wall and amid what is to be its permanent architectural framework; so that the painter can see, while he is at work, what relation his painting bears to the architecture.

Ceiling painting, though it may be classed as part of the general subject, is really under rather different conditions from wall painting; and in fact it is not very often successful. It is a complete mistake to paint figure subjects on a ceiling as they would be painted on a wall—a mistake which even such a master of decorative art as Puvis de Chavannes made, in the only ceiling painting that he executed: there is always a sense of confusion as to the way in which the figures are to be regarded; and moreover, anything like a rigid treatment tends to weight the ceiling and bring it down. Figures, if used in a ceiling, should float, not stand, as they do in the ceiling paintings of M. Marioton, who is the best living master of this class of art. Boucher's ceiling at Fontainebleau, of which Mr. Baldry gives an illustration, represents the right kind of thing, though in a rather weak and tawdry style.

Another form of decorative painting which has received much attention recently in France is what is called decorative landscape; but the idea is almost a contradiction in terms; it can hardly be more, in fact, than a suggestion of the lines of landscape in a conventional manner, unless it is to transgress entirely the proper conditions of mural painting; and on the whole we are inclined to say that the less there is of it the better.

To sum up: mural painting is a great and noble art as a handmaid to architecture, and merits far more encouragement than it has yet received in this country; but it must be kept strictly within the bounds necessary to render it a decoration, not a picture. And on the other hand both painting and sculpture, in their most complete and intellectual form, have their own independent realm, and are not mere accompaniments to architecture.

THE CORK INTERNATIONAL EXHIBITION.

THE Cork Exhibition, which has been open since May 1, is to be closed on November 1. Nearly a million and a quarter people have passed through its turnstiles; and the financial results have been so encouraging that there will be a surplus of over 5,000*l.*, besides the value of the buildings, after all expenses have been paid; and this result is most satisfactory considering the short time that elapsed between the conception of the idea and its becoming a practical reality.

The buildings for the exhibits consist of a large number of parallel aisles; and though there is nothing new or striking about them, they answer their purpose well, and have been carried out with economy and care. There are sundry restaurants and other structures about the grounds, all suitably and tastefully designed, especially the *châlet*, which is very good in its arrangements and general appearance. These buildings have, for the greater part, been designed and carried out by the City Engineer, Mr. Cutler; Mr. Wm. O'Connell being the building contractor. The section that appeals most to architectural or building students is that of the Irish mineral exhibit, in which are many fine specimens of the granites and other building stones of the country, besides sundry marbles, especially the green, red, and black from, respectively, the counties of Galway, Cork, and Kilkenny. Good slates from different parts of Ireland are also in evidence, and there would, no doubt, be a larger market for these if the quarries were better worked, for it is complained that the supply is not reliable. Excellent stock bricks are made in the county of Cork, and a superior red facing brick is manufactured at Ballinphellie and shown on the stall of the Cork Brick Co., whose pottery goods are carried by aërial and surface railway for more than ten miles to the city. The aerial portion of this line is probably the only one of its kind in Ireland, and does its work very efficiently.

The Department of Technical Instruction and Agriculture for Ireland have given most valuable help in the fitting up and supervising of the mineral exhibits, and also those of the different building and engineering industries; but, taking into consideration that the principal industry of the South and West of Ireland is connected with agriculture, the educational value of the grounds at the west end is very great, for there the aspiring farmer or gardener can see the most modern modes of cultivating the several fruits and vegetables. The picture galleries are well worth a visit, and are of such moderate size as to enable the pictures to be seen without weariness.

In addition to the foregoing, all kinds of varied tastes may be gratified with the usual classes of stalls to be seen at all exhibitions, as also with the numerous side shows. But one of the chief attractions is that of the beautifully laid-out grounds, through which the river Lee flows. The grounds are planted with splendid trees and shrubs, and the river is made gay by numerous small boats. We trust many of our readers who have not already done so will visit this interesting exhibition before it closes.

NOTES.

The L.C.C. County Hall.

THE scheme for building a County Hall for the London County Council on the Adelphi site was considered at the meeting on Tuesday, and opposed by some speakers on the ground of extravagance; but we notice that not a single speaker had a word to say in regard to the regret which ought, at all events, to be felt at a proposal to destroy the whole site in which the names and ambition of the family of the Adams are enshrined. It may eventually come to pass that this interesting quarter may have to be demolished owing to the buildings being no longer suitable for any purpose for which they can be let; but that time has not come yet; and it seems discreditable (though alas! not surprising) that the municipal governing body of London should be first to urge the destruction of a site of so much historical and architectural interest.

A Rival to Niagara Power Plant.

A SCHEME of unparalleled magnitude is about to be undertaken in California, involving the construction of two reservoirs, one of 8,000 acres area, and the other, at a level of 250 ft. lower, of 2,000 acres area. Water is to be furnished by the north branch of the Feather River, and the watershed area of the proposed reservoirs is about 600 square miles. The idea is that the reservoirs will so equalise the flow of water that a continuous supply of 1,500 cubic feet per second will be available for power purposes. A canal about ten miles in length will connect the reservoirs, from the lower of which water will be conveyed through a series of tunnels to Mosquito Creek, distant about five miles. Provision is there to be made for a vertical fall of 1,600 ft., and this it is calculated will develop energy equal to 270,000 horse-power, which will be applied in the generation of electric current for long-distance transmission.

Concrete Steel.

ALTHOUGH the theory of concrete steel is still in the stage of incubation, it appears to be progressing favourably. Some of the latest investigation bearing upon the subject relate to the ultimate resistance and the moduli of elasticity of concrete in flexure. With regard to the latter it may be said that wide diversity characterises the results obtained even when the specimens tested were of equal age and mixed in the same proportions. Tests conducted in 1895 by the Austrian Society of Engineers and Architects appeared to show that the average compression modulus for a Monier arch was about 4,750,000 lbs. per square inch, while the average tension modulus was about 5,700,000 lbs. On the other hand, some experts consider the compression modulus should be taken at a very much higher value than the modulus in tension. If a general balance be struck between these conflicting views, it gives an approximately equal value for the two moduli, but before this can be finally accepted as a reliable guide, further experiments are necessary upon simple and reinforced concrete. Another point upon which light is required is the variability of the compression modulus of simple concrete with variable stress intensities. Experimental records show that specimens of different constitution and age generally exhibit permanent set at stress intensities ranging from 200 lbs. per square inch to 1,000 lbs. per square inch, but in some cases almost perfect elasticity is maintained nearly up to 4,000 lbs. per square inch. Analysis of results reported by the Watertown Arsenal in 1899 leads to the conclusion that carefully made concrete of proportions not poorer than 1, 3, and 6, may be considered as possessing what may be termed an elastic limit under compression approaching closely to 1,000 lbs. per square inch. Probably when stress exceeds 600 lbs. per square inch, the value of the compression modulus of elasticity begins to decrease, but if the concrete be made in accordance with the most approved practice it is not likely that the decrease will become very marked until the limit of 1,000 lbs. per square inch has been reached. In the case of concrete in the proportions of, say, 1, 2, and 4, the limit may be taken without undue risk up to nearly 2,000 lbs. per square inch. As the tests from which these figures are deduced were conducted upon 1-ft. cubes of indifferently constituted concrete, it is scarcely correct to regard the material as one having practically no elasticity. The point is of some importance in the development of an intelligible theory for concrete-steel.

Municipal Telephony.

We have received a book on "Municipal Telephony," published for "The Ratepayers' League" of Tunbridge Wells. It criticises severely the manner in which the Glasgow and Tunbridge Wells Corporations manage their telephones, and proves, to its own satisfaction, at least, that their financial methods are all wrong, and that they have failed to grasp the difference between the telephone industry and other industries, like electric lighting, for example. The probable deficits that will have to be faced are exultingly anticipated and painted in glaring colours for the benefit of other municipalities who may be considering the question of telephony. The bias of the whole book is, however, too obvious, and the suggested remedy, that we should leave the whole industry a monopoly for the National Company, is an exceedingly doubtful one. We are told that the public does not realise the enormous capital required for this kind of work. "The National Company has now a capital of 8,000,000*l.* of money, and it could profitably employ another two or three millions." Even granting that this is its capital, we fail to see why this should secure a monopoly. The N.T.C. has not too favourable a record in the past, and although competing systems may be wrong theoretically, yet in practice the users of the telephone are the gainers. There has been a certain amount of grumbling recently amongst the telephone subscribers of the G.P.O., but this is only to be expected in the opening stages of such a great undertaking. We hope that in the future the whole telephone industry of the country will be worked by the G.P.O., thus securing unity of control and economy in working. It was with this end in view that the Telephone Act of 1899 expressly encouraged municipalities to manage their own telephones, and if they are careful to secure the best expert advice there is no reason why the enterprise should not be successful.

Electric Lighting and its Drawbacks.

Many municipal electrical engineers think that the great drawback to the growth of electric lighting is the high initial expense of the wiring. This is undoubtedly a drawback, as the cheapest possible price is about 10*s.* a point, and the average price varies from 1*l.* to 2*l.* The tenant does not want to make permanent additions at his own expense to his landlord's property; and the landlord, considering the risk of damage by incompetent wiremen, thinks that it may be a doubtful improvement. We think, however, that this drawback has been unduly magnified. If municipalities could sell the electric light as cheaply as gas, then the demand for it would make it profitable to the landlord to wire his houses. It is common now to see in gas showrooms a 16 candle-power electric lamp and a 75-c.p. incandescent gas burner placed side by side. The light given out by the glow lamp, especially if it be a 240-volt lamp with a blackened bulb, is ludicrously out of proportion to the light given out by the gas burner, and yet the actual cost of burning in the latter case is only about one-third of what it is in the former case. Another point where central station supply engineers fail is in keeping the pressure of their supply constant. It is easy for the consumer to regulate the pressure of the gas supply by the tap, but at present there is no economical method of regulating the electric pressure at the lamp. The consumers near one central station in London are supplied at a pressure of 255 volts during the time of full load; those further away get only about 240, which is the normal pressure of supply. The Board of Trade regulations state that 250 volts is the maximum permissible pressure of supply at a consumer's terminals, and that a variation of only 2 per cent. from the mean is admissible. These regulations are interpreted most liberally by electricians, and we often wonder how patiently consumers put up with 10 and even 15 per cent. fluctuations of pressure. When it is remembered that a variation of pressure of 10 per cent. means a variation of 50 per cent. in the light given out, it will be seen how important a constant pressure supply is to the consumer.

The East River Cable Footbridge, New York.

A novel auxiliary to bridge construction is to be found in the temporary footbridge built for the purpose of erecting the great cables of the new East River Bridge, between New York and Brooklyn. It will be remembered that we gave in a recent note some details of these cables. They are larger than any previously made, and are suspended from towers higher than those in any existing bridge. Moreover, the towers are distinguished because they exemplify for the first time the employment of steel construction on a really large scale for such a purpose. Under these circumstances, it is not surprising to find that new methods of procedure should have been considered necessary. An illustrated contribution to the "Proceedings of the American Society of Civil Engineers" gives a very interesting account of the footbridge to which we now refer. During the construction of the Brooklyn and other suspension bridges, narrow footbridges were certainly used, but their object was merely to afford means of passage from one anchorage to the other. The wrapping of the strands and of the finished cable was performed by the aid of travelling cages hung from the main cables, and the adjustment of the wires was effected from cradles suspended at selected points along the line. As the engineers of the East River Bridge considered that these methods could be much improved upon, it was decided to construct a temporary working platform in the form of a footbridge, extending the full length of the cables to be built and erected, from which the cables could be reached at all points and at all times. The photographs reproduced in the paper mentioned give some very striking views of this structure, of which the following are the main features:—In the main span the footbridge is double-decked, consisting of eight continuous footways, four upper and four lower. The upper platforms are about 4 ft. below the line of the main cable strands during the time of spinning, and the four lower platforms are just below the line occupied when the strands were in their permanent position. All the footways are connected by cross-bridges at various points to afford easy communication from all parts of the structure. The side spans of the footbridge are directly below the line of the cables, and consist of four footways in a single deck. For the support of the platforms sixteen wire ropes were employed, assembled into four groups of three ropes each, and a single rope hung above each group. The ropes are 2¼-in. diameter, the ultimate strength of each being 208 tons, and the length sufficient to extend the entire distance, about 3,000 ft., from anchorage to anchorage, passing over the tops of the towers in saddles specially constructed for the purpose. From clamps serving to bind the cables together, at intervals of 5 ft., suspender rods were hung for the support of the single deck and the lower deck of the main span, and the upper deck was supported on posts resting directly upon the beams of the lower deck. Handrails were formed by stretching galvanised wire rope at each side of the footways, and the temporary bridge was stiffened by a cross-bracing of steel rods. The platform of the main span, 1,600 ft. in length, is supported for a distance of 400 ft. away from each tower by suspender rods, and the remaining 800 ft. is clamped directly to the cables. Four 2¼-in. storm cables are suspended below the main span, while the side spans are held by guys secured to the trusses forming the end spans of the main bridge. It is said that the expectations of the engineers as to the usefulness of the footbridge have been fully realised. Much time was saved, the main cables were much better built than would otherwise have been possible, and the risk to life which is inseparable from the erection of such a structure as the East River Bridge was reduced to a minimum.

A Canal Problem.

Some five or six weeks ago trouble began to be experienced on the Grand Junction Canal in the vicinity of Tring, owing to insufficiency of water supply. In passing the Chiltern Hills over a hundred locks are necessary, and the scarcity of water is chiefly found in this part of the system. At the present time it is reported that the engineers to the company are unable to do more, even with the help of a new pumping station, than to provide water for the passage of about ninety barges a week, or about two-thirds of the normal number. Of course, water must be delivered at the summit level in adequate volume, or traffic would become impossible, and it is at this point that the shortage is most pronounced. Two large storage reservoirs at Wilstone and Marsworth are running dry; a pumping station at Low Roast in communication with the lower chalk formation is giving a greatly reduced output; and if the new station had not been finally completed some two months ago it seems probable that navigation would have been completely suspended. In previous years scarcity of water has been encountered, necessitating the delivery of water from places at a distance, but no crisis so severe as that now experienced appears to have occurred. The primary causes of the trouble are to be found in the low rainfall of the present year, and in the fact that the hill reservoirs were by no means full at the commencement of the summer season. Scarcity of water is also noticed throughout the whole district. Shallow wells have dried up and deeper wells, that have hitherto yielded unlimited supplies, are now exhausted daily to supply the needs of the inhabitants. There are several deep borings in the district, and, whilst these afford adequate supplies, they naturally tend to aggravate the deficiency

of ordinary wells, especially at the higher levels. The possibility of a contingency such as the present has evidently not been entirely overlooked by the Canal Co., although its extent may have been underestimated. The lesson taught obviously is that the company must commence every year with a very ample store of water in the existing, and perhaps in additional, reservoirs, and must also be equipped with sufficient pumping plant to supplement supplies from the reservoirs under exceptional conditions.

The River Lea.

In his Report on the Sanitary Condition of the Hackney District, Dr. King Warry, the Medical Officer of Health, draws attention to the increasing state of pollution of the river Lea, giving a table of analyses of samples of water taken from it. We have not space to reprint this in detail, but under the head of "Remarks" we observe the statement that water taken from the stream adjoining the White Hart Public House "possessed a strong sewage odour, and contained a very foul black sediment, which rapidly subsided." The only thing said for it is the negative praise that it was "free from sulphuretted hydrogen," which is not much, however, to say for the water of a river flowing through a populous district. The Report adds: "The constitution of a new Lea Conservancy Board appeared to hold out prospects of some attempt to alter the condition of the river Lea as it passes through Hackney, but up to the present no improvement has taken place."

Stained Glass Window for Lincoln Cathedral.

Mr. Henry Holiday has recently finished a stained glass window for Lincoln Cathedral. It was on view for a few days last week at the artist's studio, Oak Tree House, Hampstead, and will before long, we suppose, be seen in the position for which it is designed in the Cathedral. The glass is in memory of St. Hugh, of Lincoln, to commemorate the seventh centenary of his death. St. Hugh was a man of great qualities; incidents in his life—which was by no means a dull one, although he emerged from the retirement of a French monastery with reluctance—are depicted in the three-light window which is to keep a memory alive; a memory of times when Church and State were often in violent opposition, and which brought to the front characters as fearless as St. Hugh in denouncing unrighteousness in high places. The drawing of the six pictures representing St. Hugh in various crises of his life show the skill of the historian as well as the artist in making persons and events of long ago alive again. There is in the window that which will give pleasure to all; a story that is as interesting to the twentieth century as it was important to the thirteenth; a most harmonious colour decoration, with here and there rare touches of colour from glass only made by the artist. The detailed arrangement and the drawing are scholarly and refined, and to those who have seen Mr. Holiday's work before there will be evident the same satisfying comprehensive scheme of design that characterises other and much more difficult works which he has carried out. The upper panel of the central light shows St. Hugh at work as a labourer upon the building of the cathedral. It is not certain how far he is responsible for the thirteenth-century work at Lincoln; he most probably encouraged and directed it enough in those days to produce the finest that was possible at the time. It is also said that he was the first to use the pointed arch to any extent in this country.

A Building Site in Bloomsbury.

The site is being cleared of a large number of houses on an area covering about 18,500 ft. superficial, and with frontages to Alfred-place, Store-street, and Tottenham Court-road, east side. The ground is to be let on building leases for eighty years by the Corporation of the City of London, and belongs to their "John Carpenter" estate, lying in the northern arm of the parish of St. Giles-in-the-Fields. The property was laid out for the Corporation in 1790-1814 by George Dance, R.A., who planned the highly effective grouping of the north and south crescents, and the wide street (Alfred-place) upon the axis through their two centres. In furtherance of a scheme drawn up by the Corporation, that distinctive and uncommon feature will unhappily be destroyed, as it is proposed to demolish the two crescents and to replace them with two new streets that will form curved extensions north and south of Alfred-place, and enter Tottenham Court-road at points opposite Tottenham and Windmill streets.

The "Execution Bell," St. Giles-in-the-Fields.

One of the eight bells which constitute the peal of the church of St. Giles-in-the-Fields, that have recently been re-dedicated, is said to have been used for the same purpose as was in more recent times the bell at St. Sepulchre's, near Newgate Prison. In that case it must be an old piece of casting. The gallows were removed from the Elms in West Smithfield, in or about the year 1412, to St. Giles-in-the-Fields, thence to near what had been the site of the church of St. John at the Tyburn, where Marylebone-lane enters Oxford-street, and thence, it appears, to the locality commonly called "Tyburn," at the north-east corner of Hyde Park. Sir John Oldcastle, Lord Cobham, and his followers, the Lollards, suffered execution of sentence at the "new gallows" in St. Giles-in-the-Fields in 1414-6. Fuller says that "this instrument . . . . was first set up" for the Lollards, who were tied by their necks to the beam over a fire, whence some derived the name "Tieburne." In our issue of June 13, 1891, we illustrated an authentical bird's-eye view made in about 1560 of the buildings and precincts of Queen Matilda's lazar hospital, the chapel of which Henry VIII. converted into the parish church of St. Giles-in-the-Fields. In that drawing the gallows are depicted as standing on a site, afterwards taken in 1656 for the parish pound, which remained until 1765, just outside of the northern wall of the hospital precincts and now forming part of the roadway at the junction of Oxford and New Oxford streets. Hatton records, 1708, that Tyburn-road extended "between St. Giles's Pound E. and the lane leading to the Gallows W., length 350 yards, and from Charing Cross north-westerly 1,100 yards;" so the east end of the "lane leading to the gallows" was in his time at the north end of the present Wardour-street. Many citations, including Holinshed's mention of the death in 1330 "at the common place of execution, called in those days the Elmes and now Tiborne," of Roger de Mortimer for high treason, could be given to show that "Tyburn" as a place-name and the name of a stream seems to have been either shifted eastwards from the Elms in Bayswater (now Gloucester-terrace), or repeated, as well as the gallows.

The Motor-Car Difficulty.

A correspondent of the *Times*, two or three days ago, drew attention to a method of simplifying the question of motor-cars *v.* the public safety, which seems never to have occurred to any one here, but which has the merit of perfect simplicity, and appears to be practised in Canada with entire success. It merely consists in putting the onus of getting out of the way on the driver of the motor or bicycle (for the law is applied equally to bicycles), instead of on the pedestrian. In that sensible Colony the motor-car or the bicycle are not required to ring bells or blow horns to warn the passengers; they are not allowed to do so, as it would be regarded as a nuisance; they are simply bound to avoid running into any one, and are heavily fined if they do. In this country the accepted principle—at all events the accepted practice—seems to be that motor-cars, bicycles, and hansoms may drive as they please and the passenger must get out of their way; they are merely bound to make a noise to warn him. Really, in Shylock's phrase—"*Is* that the law?" If so, the Canadian law seems much simpler and also much more effective in its operation.

THE GUILD OF HANDICRAFT EXHIBITION.

A small exhibition at the Woodbury Gallery, New Bond-street, of work done by the Guild of Handicraft, is accompanied by a pamphlet giving an account, with sketches, of the new locality occupied by the Guild workshops, which have been removed from Essex House, East London, to the small and picturesque town of Campden, in the Cotswold district. The place appears to be an almost untouched and unspoiled mediæval hamlet, with some charming old houses; and the Guild of Handicraft have got possession of an old silk mill (representing what was once the principal industry of the place) for their principal workshops. The removal of an important art industry into a quiet country place like this is an interesting event, and if it proves successful may lead to a similar exodus from London on the part of other industries. The gain to the health and happiness of the workers by transportation from London to a quiet and beautiful country place ought to be very great; and if it is practically proved that work can be carried on in such a locality under remunerative conditions, this may offer an example of one manner of meeting the difficulty of overcrowding in London. One reflection, however, we cannot but make. The Guild of Handicraft professes to carry out work in the spirit of the teachings of Ruskin and Morris. Every one will remember that Ruskin had a lifelong enmity to railways, and was constantly denouncing them as the ruin of the beauty of England. Yet it is quite certain that but for railways such a move as this which the Guild of Handicraft has made, in taking its workshops away from the greatest centre of purchase, would have been practically impossible, as it would have meant commercial suicide.

The exhibition at the Woodbury Gallery illustrates both the strength and the weakness of the Guild of Handicraft work. Its strength lies in excellent and thorough workmanship. The oak sideboard and the writing-cabinet exhibited are admirable examples of this; everything is sound, solid, and well finished, without any character of showiness. On the other hand we see here, as we have seen in other quarters where it is professed to produce furniture of specially artistic character, that the reaction

High-street, Campden.

A House in Campden.

The Guild Workshops, Campden.

against the pretentious character of furniture of the Victorian era has led to an exaggerated simplicity and squareness of form which is in itself an affectation of another kind. Furniture for the better class of house should display a certain sumptuosity of line and style, qualities which are perfectly compatible with artistic design. The oak sideboard exhibited is what we should call a cottage sideboard, not only in respect of its small size but in its squareness and want of flow of line. This is good design as far as it goes; it is all in good taste, but it is comparatively easy to avoid bad taste when you avoid any departure from the simplest lines. What one wants for the best class of furniture is richness of effect without departing from good taste; and that is a much more difficult problem. The inlaid pewter decoration at the back of this sideboard is a good example of the effect which may be got by the combination of metal with wood in this manner. In the writing cabinet before referred to the contrast of material is produced by ebony and holly. This is a richer piece of work than the sideboard, but even here we think the rough finish, so far as surface goes, of the metal work is at variance with the general character of the work, and to a certain extent spoils it. A great deal of the jewellery and silver work is very good; and one notices that while the furniture shows an exaggeration in the direction of squareness and simplicity of line, the jewellery rather tends to err in the opposite direction, being too full of twists and curves of unsymmetrical character, with some little of the trail of "l'art nouveau" over it. However, there is much in this part of the work that one can frankly admire. The prices of things seem very high; but where there is good workmanship this may be expected. One of the things the public has to learn is that good workmanship cannot be done at a cheap rate.

We give above reduced reproductions of three of the sketches by Mr. New, in the pamphlet handed to visitors to the exhibition; showing the High-street, Campden; an interesting Late Gothic house in the town; and the old mill which now contains the workshops of the Guild.

Truro Cathedral.—Truro Cathedral Building Committee met on the 9th inst. The report of the architect and contractors was that they were perfectly satisfied with the progress and condition of the building, and saw no necessity for the removal of the fractured bases of the nave pillars, reported on some time ago by Sir Thomas Drew. The nave will in all probability be completed by May 1 next. The central tower will, it is expected, be finished about next October, but it was not thought desirable to postpone the opening of the nave until such a late period of the year.

Schools, Darlington.—On the 10th inst. the new Rise Carr Board Schools were opened at Darlington. The schools are from the design of Mr. G Gordon Hoskins, J.P., architect, of Darlington. They will cost over 8,000*l*.

THE ARCHITECTURAL ASSOCIATION.

The opening meeting of the Architectural Association School of Design (elementary and advanced) was held on Tuesday evening in the Meeting Room of the Royal Institute of British Architects, No. 9, Conduit-street, Regent-street, W., the President of the Association, Mr. H. T. Hare, presiding.

The Chairman, in opening the proceedings, said it was a great pleasure to see so many students present, but he regretted to announce that Mr. E. S. Prior and Mr. E. W. Mountford, who were expected to be present to address them, were unable to do so. He was glad to say, however, that Mr. Leonard Stokes had kindly consented, at very short notice, to take their place, and from him and Mr. Guy Dawber, the students would no doubt derive a great deal of very serviceable knowledge, as they would also from the study of their work.

Mr. E. Guy Dawber then read the following short paper:—

"I have been asked to speak to you to-night upon the subject of 'Design,' and to try and suggest a few thoughts that may be of use in your studies during the coming session. I must confess to a certain amount of diffidence in doing so, for, in our profession, we are all students together, and any advice that I can offer you, I know quite well, applies with equal force to myself.

The subject of design is so wide, and embodies almost everything dealing with form and colour, that it is quite impossible to treat of more than the mere essentials that enter into an architect's everyday work. Broadly speaking, design depends a great deal on its environment and on its suitability to its purpose, and what may be admirable under certain conditions will be wrong and out of place in others.

As illustrating this fact, you have only to think of the town house, with merely a front, and blank walls on either side, planted down in the middle of a country field. As a house, it doubtless contains the necessary accommodation, but regarded as a design it is wrong, and shows at once that every building must be dealt with in strict relation to its particular surroundings.

The same thing applies with regard to decoration, for here, more almost than anything else, there should be a continuity of style and idea, and one range of thought should dominate the whole scheme. You know, only too well, that any excess of ornament and decoration should be avoided, and that it should only be used where it helps to complete your design. Our President was so right the other night when he urged the use of indiarubber, for it is only by going over your designs again and again, finding each time what you can leave out, that you will produce a satisfactory result.

It is a recognised fact amongst painters that selection of line expressing form is essential to good drawing, and perhaps our admirable black and white artist, Mr. Phil May, is an instance of this, for after making careful and detailed studies his invariable practice is to eliminate everything that is not absolutely essential to the expressing of the form and action he wishes to convey, and that is one reason why the directness and straightforwardness of his work appeals to everybody. And it is the same in our work, where profusion of detail and ornament confuse the eye and take away all feeling of restraint and repose, and also the idea of strength that every good building should possess. Remember that the object of all decoration is to ornament and to adorn, and not merely to show off the skill of the designer and decorator, and unless placed in the right positions and where it helps your design, it is not only worse than useless, but detrimental in every way.

Of course, in discussing the question of design, it is impossible to reduce it to a science, or lay down any hard and fast rules to be followed, for in all ages the question of what is beautiful, or the reverse, either in architecture, painting, or sculpture, has been one upon which men have never entirely agreed. Design depends necessarily upon the individuality and temperament of the designer—for where one will look at a thing and judge it as a whole, another will instinctively in his mind's eye deal with it in detail, and think more of each separate fact than of the complete work, which these facts go to make up.

There is much difference of opinion as to how far an architect's work should be influenced by tradition. Some will urge you to go straight to Nature for your ideas, and not trouble about the works of man, which must be inferior to those of his Maker. This is a fascinating theory, but to my mind, in practice it does not seem feasible—for think of it, architecture is essentially utilitarian — in other arts you may go straight to Nature and borrow first-hand—the painter, his colours from the sunset; the musician, his song from the birds—but neither the ant nor the bee would give us any practical suggestions in the solution of difficulties—nor would the contemplation of any number of leafy avenues ever help us to design a church or cathedral.

You should study the works and buildings of our best living men, as well as those long since dead and forgotten—it is a mistake, as many students do, to neglect the prosaic present for the picturesque past. If you see a beautiful building, and one that gives you lasting pleasure, try and analyse it—dissect it piece by piece—get right down to its dry bones, so to speak, and find out what it is, in its composition and construction that produces this result. The cultivations of this habit of analysing every thing you see, of dealing with actual existent facts, will help you to design, far more than studying endless books and illustrations, and making dozens of pretty sketches. It is a good thing to think; the more thought we put into our work the better it will be

done. Work of all kinds becomes exalted, ennobled, refined, and produces good lasting effects just in proportion as we put thought into it.

Beauty in architecture, as you well know, does not result from richness of material and profusion of ornament, but from elegance of form and proportion, harmony of colour and perfection of practical execution—and also in great measure from the intelligent application of material to its uses, and it is well you should always bear this in mind. Remember that all materials have their limitations and uses, and think over the suitability of the forms you decide upon, and then confine your design strictly within that margin.

If any special building or feature of it particularly claims your attention, you will find that the proper and legitimate use of material has much to do with its charm and pleasing effect, and this is the point that I want to emphasise to-night. Do not, of course, be led away into thinking that mere perfection of material and workmanship will atone for feebleness of design and composition, for they never can, but materials and the way they are used have a very large influence upon the final result of your work, and in your designs you should always bear this in mind.

I see amongst the subjects of the work of the session, summer-houses and bay-windows in wood and stone, a cottage, market-hall, and railway-station and font and so on, all of which require individual treatment with regard to materials of which you propose to construct them. In dealing with any one of these subjects, make up your mind beforehand, almost before you have crystallised your ideas on to paper, of what they shall be built—if in stone, then whether of rough rubble or finely-finished ashlar; whether the roofs shall be slate or tile—all of which require differently treating, and which should affect the character of your design. If your building is in brick, arrange your construction for this material, and confine your details within the sizes that bricks are made, and do not attempt to get out of one material the effect that belongs properly to another.

If you are dealing with plaster, and your house is in rough cast, remember that this is a material that requires broad and simple surfaces. We have only to look around us even to-day to see the numerous instances to which this material particularly has been degraded. Can anything be more false in construction and design than the imitation in plaster of half-timbered work painted to imitate wood?

Guard against being carried away by the love of the pretty and picturesque, and, above all things, avoid any sham or imitation in your work. Wherever possible, study the way in which all materials are used, whether in old or new work—you will find much to learn and much to avoid.

In some of the designs exhibited in this room at the opening meeting the construction was drawn showing that the student had not thought out properly the material in which he was working, and which in actual building would be impracticable. It should be your aim always thoroughly to understand how you intend to use the materials shown in your designs, and this you can only get by continually observing work, both old and new.

Try and convey your meaning in as clear and straightforward a way as possible, avoiding all tricks and mannerisms, and remember that the essence of good architectural drawing is to make your design intelligible to the workman who may be called upon to carry it out.

It is an admirable plan to try and picture in your mind's eye the finished work—try and see it as a whole and complete, and also every portion of it in detail. Think over your building from all possible points, and adapt it to its site and surroundings.

If you train your mind to do this, you will be surprised to find how helpful the practice is, and in how short a time you will be able to accomplish it—it will enable you to see the plan and superstructure together; for, as you know, one is inseparable from the other, and both should be thought and worked out at the same time. Then after thinking out the mass, study it in detail and thrash out every part of it, for nothing is too small for your care, and no part must be left to chance.

Detail makes perfection, and you should endeavour to make your work as perfect as possible in every way.

And above all things, remember that eccentricity is not synonymous with genius, and in order to produce a beautiful work it is not necessary to be bizarre or grotesque.

In architecture, decoration, and furniture there is a strong movement permeating the country not only to treat material sensibly, but with freedom from the fetters of bygone schools of design. The mere copying of old forms and traditions, if unaccompanied with fresh thought and feeling, should not be tolerated, for servile imitation is a sure sign of decadence and the admission of a lack of creative force.

We need a revival of the old simple expression of individual feeling, expressed with the enlightenment and knowledge of to-day. But equally I would warn you against falling to the other extreme, and in your efforts after so-called 'originality' getting into the slough of the 'new art.' Abroad, as many of you know, this has developed into a mania, and the 'crawling line' now supplies the motive for roofs and doorways, chairs, tables, and jewellery—the designers treating wood and stone as if they were copper wire, losing all sense of proportion and fitness in a mere delirium of meaningless lines.

You know that ornament must follow good construction, and that this again must be based on the proper use of material, and though the tendency of the time is to try to be original, to produce something fresh and striking, yet I venture to think that much of what we now see around us is only ephemeral, and will not hold its place in years to come as representative of our architecture to-day.

Many of those who condemn our modern architecture, and make slighting comparisons with the old, overlook entirely the fact that none of those who constructed the old buildings we all so much admire had a tithe of the difficulties to contend with that we have to-day—the multiplicity of modern requirements; the advances made in science, in electricity, heating, drainage, and so on; the varied materials; the use of iron and steel; and the limitations and rules, at any rate, in towns—within which our buildings have to be confined.

Of course I know that all these things will not affect your work in the coming session; but you should think over them and ponder upon their meaning, so that when you enter upon your struggle in the race of life you will not be handicapped at the outset by ignorance of the difficulties and changed conditions you will have to contend with.

In the consideration of your own individual designs try and think them out for yourselves on sound and logical principles, and remember that is only by honest endeavours to adapt our art to every-day requirements that we can make it a real benefit to present day architecture."

Mr. Leonard Stokes said his remarks would be rather general, for he was not asked to take the place of Mr. Prior and Mr. Mountford until twelve o'clock that day, and since then he had had to go a little distance into the country; the consequence was that he had only been able to prepare a few notes in the train. He was sorry that Mr. Prior was not present that evening, though he thought he might possibly be able to tell them briefly what Mr. Prior's theory was—it was that it was impossible to teach out design Well, such conclusion might be arrived at, but, at the same time, a great deal could be learnt about design. Mr. Prior's theory, he believed, was that design should grow spontaneously. Well, there were very few things that grew spontaneously; most things required some sort of cultivation. Wild flowers were very beautiful, but after cultivation they might produce more glorious effects. Wild fruit trees, again, required to be trained, pruned, and grafted before they gave the best fruit. More or less, the young students he saw before him might be considered to represent, say, young crab-apple trees on to which it was proposed to graft some knowledge from the gnarled old tree. The vigour of the young crab-apple tree, when it had this knowledge, so to speak, grafted on to its stem, would lead to improved results, and the fruit it would bear would, he hoped, be abundant. If those he saw before him were all going to join the classes of design, those classes would be a most magnificent success this session; but from his knowledge of the past he was afraid they would not all do so. The object of the classes was to assist students in the study of design, and when put in that way he thought Mr. Prior's objections were met, for if design could not be taught, students could be assisted to acquire a knowledge of design, which was absolutely necessary to them. He was rather afraid to say what he was going to say on the subject of examinations, but he thought there was too much tendency to cram for their everlasting examinations. He did not know that the classes of design had as their object in any way whatever the leading up to the examinations except indirectly, and he could not help thinking that students would do themselves much more justice if they did not think quite so much about qualifying for some particular examination in some particular month. Students should take things more quietly, and learn thoroughly what they wanted to know, and not cram it into themselves in such a way that it left them in a few days or weeks; for after all they were preparing themselves for their future career—they were not preparing for a future examination. He hoped he was not flogging a dead horse, but he would urge upon them the advisability of preparing themselves for their own future careers, and not of preparing for any particular examination. Their futures as a whole were much more important than passing an examination by a particular time.

Mr. Dawber had said so ably almost all that need be said that it seemed almost unnecessary to go on. If they had taken in half that Mr. Dawber had said, and would go away and practise it, they would become very good architects. He (the speaker) would emphasise one or two points, however.

Proportion was one of the principal things in design. If they got the proportions of a building correct—by correct he did not necessarily mean according to any particular rule—but so that they would satisfy a well-trained eye, as a well-proportioned building would always do. Nor did he advocate much detail which was too often a mass of crudeness, for a building well thought out and in good proportion did not require much detail. One of the great things was to know how much to leave out of a design, and not to put in all that could be thought of; but to eliminate a great deal of the unnecessary and superabundant detail which Mr. Dawber had referred to.

He did not think the remarks of the President, in his recent address, as to indiarubber were quite fair to the original author of the condemnation of the use of indiarubber, who was speaking more in regard to sketching. If they wished to produce show sketches they should try to do without indiarubber, for if they did without it they would make a much better sketch than if they produced their sketch after rubbing out two or three times. There would no doubt be a loss of accuracy at first, but if they were to make sketches which would be pleasing to look at they must do without the use of indiarubber. Of course indiarubber was most valuable, and he did not know how architects would get on if they did not frequently rub out some of their ideas.

As to measured drawings, he thought that students would do well in their young days to confine themselves to measuring what they saw, for if they did that carefully they learnt so much. The student did not measure for the sake of making pretty drawings, but when he saw a piece of work he admired, he proceeded, or should do so, to measure it and put it on paper. He should say to himself, "That piece of work up there, when drawn to an inch scale, produces an effect like this; the next time I want to produce something of that nature I know that if I get an effect on paper like this the result will be something like that"—so that one worked backwards to work forward. They saw the work they admired, and they put it on paper. Then when some one commissioned them to design something; they had to begin by putting their design on paper, and then, with the knowledge they had gained by representing bricks and mortar on paper, they were able to produce a satisfactory result when building in bricks and mortar from paper.

Mr. Dawber had spoken about new work. They might think it obvious—but it was not—that good new work would teach them very nearly as much as old work, for if they confined their studies to old work half the problems met with in modern life were absent in that old work. New buildings must be studied and examined, or the young architect would have to fight out all the problems of modern building for himself, and it was possible he would not grasp them well the first or even the second time. These modern problems could be understood by studying modern

buildings, and the solution of them was easier and quicker in that way to most students than if the student worked them out for himself.

He was glad to hear Mr. Dawber's remarks about materials. It seemed so unfortunate that some architects should jump about from the use of one material to another. Occasionally they got a design that might have looked all right if it had been worked out, or thought out, carefully in proper materials, but instead of that the architect used some red brick here, a piece of white stone there—because carving was wanted—or they got a very nicely-proportioned window with stone dressings which had to be bonded into the brickwork surrounding it, which resulted in irregular bonders all round the window. The zig-zag effect of the bonders, which was often puzzling, was often more noticeable than the delicate mouldings which formed the jambs or the arch of the window. If they had to design a brick or stone building, they must from the first limit themselves to some form of brick and stone treatment which would not produce a lot of irritating lines where the brick and stone joined, for these joinings had the effect of marring the design.

Simplicity was a very important matter, and he was afraid they did not run much risk of being too simple in their work. The Class of Design was an excellent institution for more reasons than one, though they might not agree with what he was going to say: it enabled students to throw out a good deal of crudeness of design that was latent in them, and competitions were useful in the same way. Some designs, in the school and in competitions, looked as though their author had had a bad attack of measles, judging from the rash thrown out.

In studying old work, they should not do so in such small fragments that the work they did was of little use to them when they wanted to refer to it afterwards. He had known students make a study of a door or window. They measured the external jamb and arch, and they stopped there; they did not go inside and show how it looked there. That sort of thing was sometimes seen in the Class of Design; the idea had been copied from something sketched by the designer, and made a very nice design from the outside, but no consideration was shown for the door seen from the inside. That was a small illustration of what he would venture to call want of thoroughness. When they studied a thing, they should study it thoroughly—not in a scrappy or unreasonable manner. They should take the thing as a whole, and if they could not measure it, they should sketch it, but they must not omit to put dimensions on the sketch. Dimensions would not do any harm to the sketch and they would be found invaluable afterwards. To know that a doorway was so many feet wide was invaluable afterwards. The size of a thing was very important—the real size of a thing. He remembered that a friend of his once let fall a remark that he always designed to one-eighth scale. Now that was a fatal thing to do; they should design full size and think of a thing full size. If they could not think of a thing full size, they should take out their measure and measure it; they did not want to have anything to do with pettifogging one-eighth scale. Of course, they had to do so in order to get a contract or in dealing with the Building Act, but they did not, or ought not to, design to one-eighth scale. They should design inwardly much larger, and then, by necessity, reduce it; "but do not design to one-eighth scale. Think of your building as a whole and never mind little pieces of detail. If you get a good building, a good mass, a good general effect, then the detail (if you have any knowledge in you whatever) will more or less grow spontaneously." The first thing was to know what they were going to build, and having decided on the general treatment, the detail could wait. They should design their building and think of it in bulk, and then by degrees they came down to the details.

He was glad Mr. Dawber had criticised the "new art." He thought they were well advised not to have anything to do with it. It might be very original, but they did not want to strive after a type of originality of that kind. Their own individuality would be enough if they digested and studied the work done before them by others on more or less recognised lines. Their own individuality, if they studied carefully, would give their buildings quite as much originality as was really wanted.

Another most valuable avenue to knowledge was the study of works in progress. If they were in offices designing to one-eighth scale or tracing quarter full size they would never get on particularly well. They must get out on the building in progress and see things going on; and think, and make a mental note of what to avoid and what to do when it came to their turn to erect buildings.

The Chairman said they were much obliged to Messrs. Dawber and Stokes for the good advice they had given, and he desired to propose a very hearty vote of thanks to them. Advice given in that way must be, of necessity, more or less in the nature of truisms, yet the more such advice was repeated the more it was impressed on one's mind. The most important thing that had been spoken about was as to simplicity in design. He did not think that could be repeated too often, for the greatest difficulty in design was to keep their work simple. If they studied some of the best old work, they would see how very simple it was when put on paper. For instance, the garden front of St. John's College, Cambridge, was one of the most charming pieces of design, but on paper there was absolutely nothing in it at all, and that showed the importance of keeping things extremely simple. The same remarks applied to Trinity College Library, Cambridge. He quite agreed with what Mr. Stokes had said about preparing for examination. But, at the same time, he was sure Mr. Stokes did not wish to say it was not a good thing to have an object in front in their study. And although they might be crammed, a great deal learnt in that way remained, and was of use to a man. It was quite impossible to teach design; it could not be taught unless it was in a man, but a great deal of useful help could be given as to what had been done in the past—what had been successful and what unsuccessful. It was hopeless to think of designing if they had no material of that kind to work upon, so that the more study they gave to that sort of thing the more they would have to draw upon in working out their own designs.

Mr. H. H. Statham said he should like to second the vote of thanks. He quite agreed with Mr. Stokes in saying that Mr. Dawber was right in all he had said, except in one passing remark which was not essential to the subject. Mr. Dawber remarked about the music of the birds and the music of nature. As something of a musician he (the speaker) wished to say that the music of nature had no more to do with the art of music than the trees had to do with Gothic vaulting. Music was an artificial art entirely. As to what Mr. Stokes had said about examinations, he agreed that one should not think only of passing the examinations. This was an over-examined age in every walk of life, and a man could not be examined in design, or in art. Architecture, however, had this peculiarity in comparison with other arts: it was mixed up with questions of practical construction. He thought it was a desirable thing that architects should have established some sort of examination which would afford the public the satisfaction of knowing that the architect they went to could be trusted with the construction of a building. As to design, the matter was very different. A man must find his own level, and people who knew anything about such things would find out whether an architect were an artist or not. But he thought that examination in construction was a good thing, because it gave a point to work up to. That side of architecture was to many men the least interesting, but it could not be overlooked. As to another of Mr. Stokes' remarks as to originality and that the thing they had to think of was the design of buildings, students should try to keep out of their head the idea of any particular thing they wished to imitate, something that they were fond of: they should not try to make their building convey that, but should endeavour to think from the first what shape their building should take in order to fulfil its practical requirements. A great deal was missed by young architects in their habit of trying to design something in memory of something else they had admired very much, and then getting the building to fit it afterwards. If they always thought of the practical problem of the building, they might get an original form and decorate it in their own way afterwards. As to the study of detail to one-eighth inch scale, that was excellent advice when circumstances rendered it possible to act on it; but they did not always. But with the study of full-size detail should go the study of the general elevation, of whatever scale it is. Very often the client would not let them do that—he was in a hurry to get the contract signed; but when they got a client with common sense who cared for architecture for its own sake, they should tell him that it would be better to wait and give more time for the preparation of the drawings. When they got a client to agree to that, they should sketch out the full-size details *pari passu* with the one-eighth scale or quarter-scale elevation; and if they did that they would be better able to see their relation to the whole. When they were not able to do that, they often found that they wanted afterwards to do something for which there was not space or which would not fit in with the general design.

The vote of thanks having been heartily agreed to, the meeting terminated.

MANCHESTER SOCIETY OF ARCHITECTS.

The following is the address delivered by the President, Mr. Alfred Darbyshire, at the opening meeting of the new session of the Manchester Society of Architects, on Thursday, the 9th inst.:—

"On entering the second year of office as President I must express to you my high appreciation of the honour you have conferred upon me by re-election. I trust I may be able to steer through the difficulties and responsibilities which, of necessity, are associated with such an office; and that at the close of the term we shall not have lost in dignity and respect as an important provincial institution in alliance with the Royal Institute of British Architects.

It seems desirable that in this address I should allude to several important matters which concern the welfare of our art in a large community like this, but it is also desirable that I should review the present condition of architecture, and indulge in some speculation as to its future history and practice.

The efforts of our Society in connexion with the official control of architecture in this city have been attended with satisfactory results and by the appointment of a City Architect. The duties of the office have been carefully defined by the Corporation authorities, and the appointment has fallen on a gentleman fully qualified to perform those duties and who is a member of the Royal Institute of British Architects.

In my former address I alluded to the proposed establishment of a chair of Architecture at the Owens College. I had to chronicle the failure of our efforts to induce the Corporation of the city to join in the establishment of this University chair of Architecture; and I also stated that our efforts would not cease till every means at our disposal was exhausted. The paramount question we have to deal with is that of endowment, so as to make the Professorship worth the acceptance of a man in whom the profession would have confidence, and whose opinion on all points of artistic value should be sought and respected. It must be admitted that such a tribunal of appeal is required in dealing with artistic matters in such a city as Manchester. We are surrounded with evidences of this want of advice and control; witness the architectural settings of our public statues and the artistic horrors and heraldic blunders made in the decoration efforts of public buildings (including the civic hall) at a Coronation time or on other occasions of public rejoicing. There are many ways in which the knowledge and culture of a Professor of Architecture at the University would be of great value, and without in any way conflicting with the official control of the City Architect.

As I have said, the question of endowment had to be faced. It was a serious consideration with the College and our Society on account of our failure to induce the Corporation to join in the effort, or to provide any portion of the funds. Our fellow member, Mr. Stannus, was doing what the Corporation needed in connexion with the Municipal School of Art. Now that he has resigned his office (and this he felt he must do for reasons which, perhaps, do not concern the public), the Corporation has joined the movement, and, with the assistance of funds promised by gentlemen interested in our art, I feel that we are now approaching a consummation which will add honour and dignity to architecture and its practice. When my term of office closes with

the present session, I hope to vacate this chair with the knowledge that the Chair of Architecture at Owens College is an accomplished fact.

I alluded on a former occasion to the important question of architectural competition, and to the need for proper and efficient assessment. This matter has been much under discussion during the last year, and things have gone so far as the establishment of a society, which, I believe, desires to advise the Royal Institute, in connexion with this question of assessorship. I think it will be found that the Institute has adopted and arrived at resolutions which will cover the situation and meet all requirements. When an assessor is appointed (no matter by whom) he should be chosen with a view to his knowledge on the particular class of work upon which he has to adjudicate. I may say here (by way of parenthesis) that I have no sympathy with those public authorities who place assessorship in competition, and who, I fear, appoint the lowest bidder for the office, independent of his ability to adjudicate on the particular matter offered for his consideration. Having chosen an assessor on the right lines, it is essential that his decision should be final and binding on his clients, the promoters. In this way, and in this way only, will the country secure the best architectural results, and justice be done to the profession. The only excuse for departing from this rule would be some serious and insuperable objection to the author of the selected solution of a competition problem. Let us hope that such a condition will never be possible.

As before remarked, it appears desirable that on an occasion like this we should review the present condition of our art and indulge in some speculation as to its future. I confess that the latter consideration constitutes a formidable task, and one in which imagination and surmise must play the chief parts. Let us, however, indulge in a brief review of architecture as we find it at the present time.

We, who have done much of our work during the Victorian era, may pause and wonder at the present development and practice of architecture, and speculate on the probable condition of the art during the first quarter of the twentieth century. It seems to me that a fit and proper motto for the present condition of civilisation and movement is the one word, 'Speed.' At such a rate does science move in the application of its principles and discoveries to the needs of humanity and progress, the architect is bewildered, and his greatest energies are needed to keep pace with this hurried onward movement. In the architecture of our cities architects have, and will have, the hardest tasks to perform in the application of their art to the present and to the probable conditions of the future. This unseemly speed and competition has engendered a utilitarian spirit, which dominates all city architecture. If a beautiful and refined façade is produced, its lines and its architectural beauties are ruined and destroyed by huge signboards in the form of cut-out flaring gilt letters stuck on the elevation, often without the least respect for the lines of architecture, and to the complete destruction of what often is a costly artistic effort. Speaking of science, just consider what electricity is doing in the way of destruction of city architecture. Holdfasts for overhead wires are driven into and fixed on architectural façades without the slightest consideration for their artistic value. It is a matter of no consequence as to whether the buildings are public or private, and perhaps no greater instance of the hasty application of scientific requirements, to the spoliation of architecture, can be found than the present aspect of Albert-square in this city. It is a mass of electrical network; the fine elevations of Waterhouse are completely cut to pieces, and their beautiful lines destroyed. The speed at which we are travelling in scientific and other developments does not allow of time to consider the result of existing conditions, hence the architects of this new century find themselves on a new platform of practice. It is said that on the occasion of one of Ruskin's Oxford students returning from Italy he said to the great master, 'The moment I entered the Florentine gallery I knew why you have given to Botticelli such supremacy' (or words to that effect). 'Indeed,' said Ruskin, 'you saw this in an instant? and, only to think, it took me twenty years to find it out. What will be the end of our civilisation if we go at this speed?'

This is not the occasion for a dissertation on ancient or modern history; but there are some points in connexion with our art that are worth alluding to, and some curious and interesting lessons to be learned from the history of the last two hundred years. Over a hundred years ago Englishmen, through Hanoverian obstinacy, quarrelled with their brethren settled in the western world. The result of this quarrel was the building up of a new civilisation. As a matter of necessity, this was done in a hurry to meet the demands of the new life and independent administration. The rapid and wonderful completion of this new civilisation was well described by Tennyson, who so beautifully described America as

'Gigantic daughter of the West.

The modern historian, who writes the chronicle of our own time will have to recognise a topsy-turvydom unknown in the world's history. England, after its past centuries of consolidation in art, literature, and intellectuality, is now going at the speed which characterised the building up of the new western world; whereas America is now consolidating in the realms of art, literature, and intellectual culture. The value of our own art is fully recognised; and, although the old speed has not quite disappeared, there is a strong and growing disposition to acknowledge the power of beauty in architecture. On this side the Atlantic we do not hesitate to spoil our art with the hideous application of scientific necessities; there is little respect for existing beauty; we even go to such lengths as painting white marble statues (and, I regret to say it, in our own City, too), although they are recognised as the works of great sculptors of bygone days. Public boards are congratulated on their ability to dispense with the services of an architect, owing to the amateur cleverness of officials. Competitions in architecture are mismanaged, and are often valueless from an honourable standpoint. Briefly, the architect of this new century has a condition of things to grapple with which will militate against the principles of beauty in architecture; and without beauty architecture becomes mere building and only the exponent of science.

It may reasonably be asked, if such a gloomy and despondent view is to be taken of our beautiful art, can nothing be done to save its destruction, and to perpetuate and maintain some of the past traditions upon which it has been based since the days of its perfection on the classic plains of Attica? I am convinced that the only reply to this interrogation is—let the architects of the present, and all future time, study the art of the past, whether Pagan or Christian; from such study will be evolved the fact that, whilst all past architecture was the outcome of certain eras of civilisation under climatic conditions, it never lost sight of the beautiful. A study of our art in the past will also reveal the fact that it was truthful to the requirements of the time. This is an important point, and should never be lost sight of; then Christian places of worship will no longer be copies of Grecian temples, factory and workshop buildings will not violate Italian art by the use of its beautiful turrets for chimney stacks; but the evolution of our art in the future will be truthful to the requirements of the time, and not the result of eccentric efforts at originality or merely reproductions of past examples. A new style on the instant is impossible; it is, and ever will be, the growth and requirement of time.

Whilst attending the banquet at the Walker Art Gallery, given by the Liverpool Society of Architects, and speaking as the representative of our Society, I took occasion to tell the company that I once heard the late Lord Leighton say in their own great St. George's Hall, that he had devoted much study (in the original Greek of Thucydides) to that wonderful oration spoken by Pericles over the victims of the first Peloponnesian war. A remarkable discovery was made by Leighton. About the middle of the oration, Pericles, in an interrogatory diction, asked how it was that the Greeks were supreme in the standard of nationality and culture? His answer was, 'Because we love the beautiful.' This is surely one of the most wonderful utterances on record. It is not for me on this occasion to follow the train of thought begotten by such an utterance. It may be said, however, that as far as the Greeks were concerned, it was absolute truth. How does such a truth affect the greatness of England and her Empire? I will venture to say that when England loses her sense of the beautiful, her downfall in the scale of nations may be expected, and our own beautiful art will pass into the shadows of the unknown.

It is a matter for serious consideration as to how our architects are to face this new condition of English civilisation. The struggle between the commercial and the beautiful will be fierce, and its issue doubtful; we can only hope that under whatever new conditions and requirements architects may have to work, they will, like the grand old Greeks, still love the beautiful, and so help to maintain through the coming ages the prestige of our great Empire."

ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A Home Counties meeting of the members of the Association of Municipal and County Engineers was held at Aldershot on Saturday, October 11. The members assembled for the business meeting in the Institute, where they were received and welcomed by Mr. T. Jeffries, Chairman of the District Council. Mr. W. Weaver (Kensington), Vice-President, occupied the chair (the President not arriving until later in the day), and there were present Messrs. J. P. Barber (Islington), T. Cole (Westminster), N. Scorgie (London), W. P. Norrington (London), A. H. Campbell (East Ham), J. Lemon (Southampton), A. D. Greatorex (West Bromwich), E. P. Hooley (Nottingham), R. J. Thomas (Aylesbury), Nelson Dennis (Aldershot), and many others.

Mr. T. Jeffries, in welcoming the members, said they at Aldershot were pleased to have the honour of receiving the Association.

The Vice-President, in acknowledgment, said it was instructive to the members to visit different districts to inspect the work of their colleagues. It was the opinion of the Association that the mutual interchange of criticisms and views upon each other's works led to benefit, both to the people criticising and the person criticised.

Mr. R. J. Thomas (Aylesbury), County Surveyor of Buckingham, was unanimously re-elected Honorary Secretary for the Home Counties district.

Mr. Nelson F. Dennis, Engineer and Surveyor to the Council, presented a paper on some municipal works at Aldershot. He said Aldershot was constituted a Local Government district in 1858, as the outcome of the establishment of the camp in 1853-4. The camp, originally a collection of wooden huts, now consisted of fine blocks of brick and stone buildings and well-made roads and paths, named after various Generals of note. Thought and attention had been given, in the laying-out of the camp, to the provision of the many things calculated to make the life of the soldier cheerful as well as useful. There were provided for him reading-rooms, libraries, recreation-rooms, gymnasiums, swimming bath, recreation-grounds, and various institutions where he could improve his general knowledge of things. The married quarters were arranged on the tenement principle, of which there were some very good blocks. The area of the Aldershot Urban District was 4,177 acres; and, as an index of the rapid growth of the town, he mentioned that the rateable value had advanced from 79,000*l.* in 1898 to 130,000*l.* in 1902. The average death rate for the ten years 1891-1900 was 16·9 per 1,000. The water supply was under the control of the Aldershot Gas and Water Co. The supply was derived from wells sunk into the chalk, and was ample in quantity and good in quality. The water was somewhat hard, being 16·8 deg. on Clarke's scale. The water charges are based upon the rental, 6 per cent. under 50*l.*, 5½ per cent. for 50*l.* to 100*l.*, and 5 per cent. above 100*l.* The gas was 2s. 10d. per 1,000 cubic ft. Aldershot was a fully "water-closeted" town, and now that the "contour sewer" was completed, provided with sewers for all parts of the district. The contour sewer was laid in 1901 for the purpose of encouraging the opening up of the land for building purposes on the southern slope of the district, also to receive the drainage of a portion of the west end, then drained to two of Shone's ejectors. The latter were becoming insufficient to cope with the sewage due to increased building operations. The area of the district provided for by the contour sewer was 430 acres. The sewer was constructed of Hassell's single-lined pipe, and a short length of double-lined, varying in diameter, commencing at the sewage works with 18-in. pipes, and continuing for 5,320 ft. at a gradient

of 1 in 410; 2,000 ft. of that length was laid in tunnel at a depth of from 25 ft. to 43 ft. below the surface. Shafts were sunk at every 150 ft., which were afterwards bricked up, circular on plan, for manholes. The remaining 3,470 ft. was of 12-in. pipes, and the gradient 1 in 73. The cost of the sewer was about 6,800*l.*, towards which the owners of land abutting on the line of sewer contributed 880*l.*, and free wayleave was granted where the sewer passed through private land for a length of nearly half a mile. The rain-water from yards and the back portions of the roofs of houses flowed into the sewers, but the front roof water and street water was collected on the "separate" system, which had been laid down in nearly every road in the district. The main surface drainage was discharged at two outfalls, one near the Government siding in the northern part of the district and the other at Ash Bridge, near the sewage works in the southern part of Aldershot. It had always been the desire of the Council that the sewers should be made as perfect as possible, and he was pleased to be able to state that all the suggestions he had made for their improvement had been adopted by the Council. During 1899 a sum of 700*l.* was expended out of loan for the purpose of obtaining a better ventilation for the sewers. Prior to that year there were twenty-one ventilators fixed at the sides of houses. Since then forty-seven steel columns had been erected on the line of kerb. The columns were supplied by the Blackwall Galvanised Iron Co., and were 8 in. in diameter for the lower half, and the upper half was 6 in. in diameter. The shafts were 30 ft. in height. Tests were made as to the efficiency of the ventilators, with satisfactory results. The high standard of purity of the sewage effluent demanded by the Thames Conservancy (not to exceed ·1 albuminoid ammonia and 1·0 oxygen absorbed in four hours) required careful attention to be given to the treatment, and although prior to the introduction of the bacteria system, when the sewage was being treated with chemicals and then passed over land, complaints were at times received that the effluent was not of the required standard, since the introduction of the bacteria system and the abandonment of chemicals the effluent had given no cause for anxiety. The experimental period, usual when the bacteria system was under consideration, was terminated about four years ago, and it was determined to adopt the contact beds for the treatment of the Aldershot sewage. Since then sufficient primary beds, and half the area of secondary beds, had been constructed for the treatment of the whole of the ordinary flow of sewage. The works had been built by the direct aid of the rates, and not by loan. It had been found that the quality of the effluent was impaired by the compliance with the Local Government Board's requirement to pass it over land before discharging into the Blackwater. The land at the town disposal works was not what might be termed good, it being flat, the level very little above that of the River Blackwater, and the subsoil water at times being within 2 ft. of the surface for a considerable area. Rye grass, for which there was little demand, was the only crop grown. The sewage (the dry weather flow being about 600,000 gallons per day) was raised from the pump well a height of 18 ft., by means of centrifugal pumps, to a detritus chamber 24 ft. long by 10 ft. wide; and, without further treatment or screening, the sewage was conveyed along a carrier of brickwork, lined with Condy's vitrified buff bricks and supported on arches, to the series of primary beds, from which it was passed after due contact, varying from two to three hours according to the strength of the sewage, on to and through the secondary beds with continuous flow. The effluent then entered a carrier dug in the earth 6 ft. wide, along which it travelled for a distance of 600 yards to the outfall. The average rate of charging the primary beds with sewage was two and a quarter times per day. There were thirteen primary beds, three of which were each 138 ft. long, 24 ft. 6 in. wide, and 5 ft. 3 in. deep, and ten each of the average dimensions of 57 ft. by 35 ft. by 4 ft. 6 in. deep, a total area of 3,344 sq. ft. The beds were enclosed with brick walls, 14 in. thick, with buttresses. The bottoms were of Portland cement concrete. The sewage was admitted to each of these beds by penstocks fitted in the middle of the long side, and fell over some large clinker lumps into the filter. Neither distributors nor sprinklers were employed, as he considered their use unnecessary. The filter medium consisted of furnace clinkers graded from large lumps at the bottom, affording good drainage, to fine ashes at the top about 1 ft. 3 in. thick. The outlet valves, fixed at the opposite side to the inlets, were of the ordinary 6-in. screw-down type, and upon being opened permitted the primary effluent to flow into the low level secondary bed-carrier. The primary effluent could be controlled in this carrier by penstocks, so as to flow into any of the secondary beds, of which there were four at present constructed—two each 100 ft. by 57 ft. by 2 ft. deep (four more of this size were to be constructed), and two 105 ft. by 1 ft. 9 in. deep. The filling of the secondary beds consisted of a layer of coarse clinker at the bottom, and the top 1 ft. 2 in. of fine ashes. Neither difficulty nor trouble had been experienced in the working of the beds, and the permanent diminution in the holding capacity was not appreciable, even in the bed that had been in continuous work for three years. For this satisfactory result every credit was due to Mr. Edwards, the works manager, who had devoted throughout his untiring energy to the ensuring of the success of the scheme, to accomplish which so much depended on management. He had come to the conclusion that the disposal of a town's sewage on the contact method of biological treatment, could not be left to the automatic machine, neither could it be entrusted to the inexperienced labourer. Elaborate arrangement of valves, feeding troughs, &c., were not essential to a successful result. The surface depth to about 10 in. of the primary beds, was delved over once a fortnight, and the deposit on the top near the inlet was raked off and burnt in the destructor. The total accumulation thus removed amounted to an average of five barrows per day for the whole of the primary beds. The secondary beds were harrowed once a week. The labour required for this necessary work was two men constantly employed. The effluent had been good at all times and under varying temperatures. The cost of the primary beds, inclusive of carriers, but exclusive of the large tanks, had averaged 150*l.* each complete, and the secondary beds 220*l.* each. The value of the clinker and ashes was taken at 2*s.* per cubic yard. During wet weather, owing to the diluted state of the sewage, the holding-up in the primary beds was reduced to about one and a half hours and the excess flow passed into the storm-water tank, the overflow being treated on a storm-water filter.

Mr. W. Weaver (Kensington) moved a vote of thanks to Mr. Dennis, and congratulated him upon the care and attention he had bestowed upon the preparation of the paper.

Mr. J. Lemon (Southampton) in seconding, expressed his surprise that the Water Company had not taken some steps to soften the water. It was not a desirable thing to supply water with 16·8 deg. of hardness. As to the bacteria beds, he regarded Mr. Dennis's statement that the permanent diminution in the holding capacity was not appreciable even in the bed that had been in continuous work for three years, as somewhat misleading. Mr. Dennis further on gave the explanation when he said the surface depth to about 10 in. was delved over once a fortnight, and the deposit on the top raked off and burnt in the destructor. It was only a question when the beds would silt up if some means were not taken to arrest the matter in suspension. That would have happened in Aldershot if steps were not taken to constantly remove the deposit from the beds. As the cost of doing it was at least 100*l.* a year, it represented a capital outlay of 2,000*l.* He suggested that the money could be more profitably employed in constructing tanks to arrest the matter in suspension, and thus give the beds a fair chance.

Mr. A. D. Greatorex (West Bromwich) said they could construct detritus tanks to deal with more than half the flow for 2,000*l.* He felt certain, after his experience, that beds constructed like those at Aldershot would silt up. Although the top deposit was raked off, a good deal of mineral matter got down to the beds, which were losing in capacity.

Professor Henry Robinson (Westminster) spoke of the importance of intercepting inorganic matter in treating sewage biologically. He had a great deal to do with this class of work, and he found, in spite of all they could do in intercepting detritus, there was a certain amount of inorganic matter, fibrous and other fluffy substances, which got into the beds. It was therefore important in designing bacteria beds to take pains to remove whatever could not be dealt with by the bacteria.

Councillor Robertson (Aldershot) claimed that Aldershot was the pioneer in bacteriological treatment of sewage, and said their earliest experiments in this direction were made in a barrel.

Lieutenant-Colonel Jones, V.C., gave some particulars of the work done upon the military sewage farm, of which he has engineering charge, and Mr. Brooke (Strood), Mr. W. Harpur (Cardiff), Mr. A. H. Campbell (East Ham), and others contributed to an interesting discussion.

The round of visits included the bacteria beds, the military sewage farm, and the abattoir, swimming bath, and electric lighting station at the military camp. The members were entertained to luncheon and, on return to Aldershot, to tea.

AN ARCHITECTURAL EXHIBITION IN NEW YORK.

We have received a letter from Mr. Laurel Harris, Vice-President of the Architectural League in New York, in reference to an exhibition of photographs of religious art which it is proposed to hold in New York. The best assistance we can give in the matter is to print a part of his letter, which explains itself:—

"The Architectural League of New York was organised February 18, 1881, for the advancement of architecture and the allied fine arts. The members must be engaged in practising some one of the arts as a profession. In the last five years organisations similar to the Architectural League of New York have been formed in all the largest cities of the United States, and in Toronto, Canada. These organisations have come together under the name of the Architectural League of America, and have established a circuit exhibition of photographs, which goes from city to city, and is shown in conjunction with the annual exhibition of the local clubs. This year I am chairman of the circuit committee. The Directors of the Architectural League of America have decided to make a feature this year of a collection of photographs of religious art. It is for this exhibition I wish to get photographs.

As our annual exhibition here in New York is of a miscellaneous character, it has been thought wise to hold a special exhibition of such photographs as my committee is able to obtain. This exhibition will be in the Fine Arts Building, 215, West Fifty-seventh-street. It will open with a grand banquet, attended by distinguished prelates, and members of various artistic societies. The date set for receiving photographs is on or before October 25. Exhibits should be directed to the Architectural League, 215, West Fifty-seventh-street, New York City, to the care of Wm. L. Harris. From the time the exhibits are received in Fifty-seventh-street all expenses are paid by the League."

It is to be regretted that the communication did not reach us earlier, as there is hardly time now for photographs to be delivered by the date named; but if any English church architects or artists in church decoration like to send photographs, we should think that under the circumstances they would be received after date.

THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir J. McDougall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Southwark Borough Council 7000*l.* for paving works; Wandsworth Borough Council, 19,000*l.* for paving works; Greenwich Guardians, 40,000*l.* for erection of schools. Sanction was also given to a loan of 8,145*l.* for paving works to the Paddington Borough Council; 18,356*l.* for electric lighting works to the Islington Borough Council; and 14,589*l.* for paving works to the Westminster City Council.

Jobbing Works.—The Finance Committee reported as follows, the recommendation being agreed to:—

"On July 16, 1901, the Council, on our recommendation, adopted a revised schedule of prices for engineering jobbing works, as from April 1, 1901.

and we stated in our report at the time that it was proposed that the schedule should continue in force for one year, at the expiration of which period it would be reviewed. The Works Committee now inform us that the Engineer and the Manager of Works are of opinion that the schedule in question should remain in force for a further period of one year from April 1, 1902, and we therefore recommend that the revised schedule for engineering jobbing works, adopted by the Council on July 16, 1901, do remain in force for a further period of one year from April 1, 1902."

Site for New Offices.—The adjourned Report of the Special Committee on New Offices gave rise to a long discussion. The Report detailed the previous actions of the Council in reference to the question and showed the great need which exists for better accommodation. The Special Committee reported that after consideration of various sites, they now proposed to acquire a site in connexion with the Adelphi. The Report proceeded :—

"The site, which contains an area of 3·35 acres . . . . is bounded on the north by William street, the Tivoli Music Hall, and Adam-street; on the south by the Embankment-gardens; on the east by the Hotel Cecil; and on the west by York-buildings. The development could be confined to that portion of the site lying between the Embankment-gardens and John-street, and would probably necessitate (1) the widening of John-street from 38 ft. to 50 ft., and (2) the widening of the street known as York-buildings from about 28 ft. to 55 ft.; in both cases the setting back being on the side of the road next the building; (3) the closing of part of Adam-street; (4) the closing of Adelphi-terrace, and (5) the closing of Robert-street.

A central entrance might be made in John-street, the principal floor being about 7 ft. above the general level of that street. On this floor there would be ample and suitable space for the Council-chamber, lobbies, committee-rooms, members'-rooms, and the rooms of the Chairman, Vice-Chairman, and Deputy-Chairman of the Council, and those officers in immediate connexion with the administrative work of the Council. Below the principal floor would be two floors of offices, and above the principal floor five floors of offices.

It is desirable to keep the principal floor of the new offices at a uniform level throughout the buildings, for as this is necessarily of a greater height than the other floors, any change in its level would disturb the horizontal lines of the elevation and necessitate steps in the corridor. If the principal floor is kept at slightly above the Strand level throughout it would be about 30 ft. above the Embankment. This would admit of a projection containing two stories of offices, and could be so treated as to form a terrace along the entire south façade of the building, and afford an important means of approach from the Embankment-gardens.

The County Hall could thus be approached on the north from the Strand by way of Adam-street and John-street and from Villiers-street by Duke-street and York-buildings, and on the south from the Embankment-gardens.

These buildings would provide accommodation for about 700 officials on a basis of 150 square feet of clear office floor space per officer. In addition the present buildings upon the portion of land lying between John-street and the northern boundary of the property could be used as offices, and would accommodate about 150 officials, thus making 850 in all. This latter property would be available for further extension of the County Hall if found necessary.

The valuer of the Council estimates the cost of compulsorily acquiring the freehold with possession of the whole of the properties, as shown by red colour on the plan submitted, at 900,000*l.* This may appear to be a large sum, but considering the advantages of the site and its position, we think the Council would be justified in incurring the expenditure. We may add that, compared with other sites which have been considered, the cost would be extremely moderate, and such a favourable opportunity as now presents itself is not likely to occur again.

We have not deemed it necessary to deal with the question of cost of erection, as that would be approximately the same whatever site were adopted.

In the first place we would point out that the site possesses many advantages architecturally, inasmuch as it will be bounded by three open sides, and will be capable of simple and convenient planning. It would, moreover, have a frontage towards an assured open space under the control of the Council and opening upon the river. As regards the extent of the river frontage to the building it may be stated that it would be equal in length to the portion of Carlton House-terrace between the present central offices and the Duke of York's Column.

In the second place the site is a central one, easily accessible, and extremely quiet, and has a north and south aspect. Objection has been made to placing the County Hall in, so to speak, a back street, and we think the objection is a strong one. It does not, however, apply to the present scheme. It would apply to the scheme in the case of a purchaser other than the Council, as the frontages would then be behind the Strand, but inasmuch as the Council is able to secure, not only adequate approaches from the Strand, but would also be able to use the important frontage openings upon the Embankment-gardens and the river, this objection is no longer valid. Thus the site is of greater utility to the Council than to any one else.

There is also an important fact which bears upon this point. During recent years the School Board, the Asylums Board, the Thames Conservancy Board, and the Metropolitan Police have located themselves on the Embankment. The selection of the proposed site for a County Hall would still further identify the Embankment as the recognised quarter for public buildings, while the existence of Somerset House and the Houses of Parliament on the same frontage adds further importance to this significant characteristic. We may add that this is the last opportunity of obtaining a central site of this dimension facing the river. . . .

The site we now propose would afford sufficient area for a County Hall which would meet the requirements of the Council and be worthy of the central municipal authority of London.

We recommend—(*a*) That the standing orders of the Council dealing with applications to Parliament be suspended in order to allow the following recommendation to be considered: —(*b*) That the Council do apply to Parliament for power to acquire compulsorily for the purposes of new offices the properties bounded on the north by William-street, the Tivoli Music Hall, and Adam-street, on the south by the Embankment-gardens, on the east by the Hotel Cecil, and on the west by York buildings, and as shown by red colour on the plan now submitted."

Dr. Cooper moved and Mr. Austin seconded the following amendment, which, after discussion, was rejected on a division, the figures being 29 for, 78 against :—

"That in view of the heavy rates now being levied in all the eastern and southern Metropolitan boroughs, it is inadvisable to apply to Parliament for sanction to raise the large sums of money which the adoption of this scheme must necessitate until Parliament has given to London some new source or sources of income."

The debate was then adjourned.

Resignation of an Architect.—The Establishment Committee reported that Mr. W. Bevan, who was appointed on July 22 last as an assistant in the Housing Section of the Architect's Department, had resigned his position under the Council. Mr. Bevan has been appointed "Government Architect to the Transvaal."

Tramways: Electric Station at Deptford.—The Highways Committee recommended as follows :—

"That the estimate of 17,100*l.* submitted by the Finance Committee be approved; and that the Highways Committee be authorised to expend a sum not exceeding that amount in the provision of a temporary station at Deptford for the electrical working of portions of the London County Council Tramways; and also for this purpose to enter into an agreement on behalf of the Council with the London Electric Supply Corporation for the temporary use by the Council of a part of the Company's premises at Deptford, and for the supply of steam from the Company's boilers for the working of electricity-generating plant to be placed there by the Council. . . ."

"That the Highways Committee be authorised to insert in the contract for the roadwork in connexion with the reconstruction, for electrical traction, of the New Cross and Greenwich sections of the London County Council Tramways, a provision that the penalty to be imposed upon the contractors for non-completion of the work within the period specified in the contract shall be at the rate of 1,000*l.* per week for the extra time occupied, and that, should the work be completed within less than the specified time, a bonus at the same rate shall be paid to the contractors, in respect of the time saved."

Sewers, Wood Green.—The Housing of the Working Classes Committee reported as follows :—

"On July 29, 1902, the Council voted a sum of 4,900*l.* in respect of the construction of sewers and the formation of roads with temporary surfaces and footways with rough finishings on Section A of the White Hart-lane Estate, Wood Green. At the same time the Council decided that, if the Works Committee were prepared to carry out the work at the amount of the Architect's estimate of 4,450*l.*, the work should be carried out without the intervention of a contractor. In the event of Works Committee not being so prepared the Council gave authority for tenders to be invited for the work. During the recess the Works Committee intimated that they were not prepared to undertake the work at the amount of the Architect's estimate, and an advertisement was accordingly issued inviting tenders for the work. The tenders, which were opened by our Chairman in pursuance of authority also given him in that behalf by the Council, are as follows :—

	£	s.	d.
Mr. R. Ballard, Ltd.	3,364	0	0
„ F. J. Coxhead	3,573	0	0
Messrs. Wilson, Border, & Co.	3,581	3	10
Mr. W. Manders	3,646	0	0
„ Chas. Bloomfield	3,771	16	9
Messrs. J. & E. Bloomfield	3,788	7	8
Mr. W. H. Wheeler	3,805	3	2
„ C. Ford	3,878	0	0
Messrs. Grounds & Newton	3,924	12	7
Mr. D. R. Paterson	4,153	16	7
Messrs. E. Rogers & Co.	4,168	0	0
„ C. W. Killingback & Co.	4,439	12	9
Mr. A. T. Catley	4,689	8	11
„ J. Macklin	4,692	0	0
„ T. Adams	4,753	15	1
„ G. Bell	4,835	9	7
„ J. A. Dunmore	5,118	3	6
„ E. H. Jackson	6,163	1	7

The result of the usual inquiries made by the Solicitor in the case of Mr. R. Ballard is satisfactory, and we accordingly recommend—That the tender of Mr. R. Ballard, Limited, amounting to 3,364*l.*, for the construction of sewers and the formation of roads with temporary surfaces and footways with rough finishings on Section A of the White Hart-lane Estate, Wood Green, be accepted."

The recommendation was agreed to. Mr H. P. Harris called attention to the facts mentioned in the report, *i.e.*, that the Works Department refused the work, as they were not prepared to undertake it at the Architect's estimate, and yet twelve contractors had undertaken to do it for less than the estimate (and presumably would make a profit) and one had undertaken to carry it out for more than 1,000*l.* less. This was certainly significant, and looked as though the Works Department pick and choose what work they should undertake.

Claim for Compensation.—The Main Drainage Committee recommended, and it was agreed,

"That the estimate of 2,750*l.* submitted by the Finance Committee in respect of the settlement of the claim of Mr. W. C. B. Williams for loss sustained by reason of the construction of the Hackney Wick to Abbey Mills relief sewer be approved, and that the Solicitor be instructed to complete the matter in accordance with the umpire's award."

Mr. Daniel Watney was the umpire.

Theatres, &c.—The Theatres and Music Halls Committee reported that the following plans had been approved :—

Battersea Palace of Varieties.—Rearrangement of seating, submitted by Mr. J. Norman.

Bishopsgate Institute.—Seating, &c., submitted by Mr. F. G. Fitch.

London Pavilion.—Alterations to pit, lavatory, and bars, submitted by Messrs. Wylson & Long.

Royal Hotel, Eltham.—Various alterations, submitted by Messrs. Batchelor & Batchelor.

Surrey Theatre.—Alterations, submitted by Mr. F. Matcham.

List of Rates of Wages and Hours of Labour.—The Works Committee reported as follows :—

"The Council's list of rates of wages and hours of labour requires revision as regards the rate of pay for overtime for wood sawyers and wood-working machinists, so as to make it agree with the overtime rates included in the revised working rules for those trades agreed to by the London Master Builders' Association and the Amalgamated Society of Mill Sawyers and Wood Cutting Machinists. Our attention has also been directed to the fact that in the list are set out the names of the various wood-working machines, although the rate of pay for machinists (8*d.* to 1*s.* per hour) applies to all varieties of machines. There is no agreement in force as regards this classification, and, with a view to simplification, we propose that the names of the various machines should be struck out and the trade specified as 'mill sawyers and wood-cutting machinists.' We recommend that the Council's list of rates of wages and hours of labour be amended by the substitution of the words 'mill sawyers and wood-cutting machinists' for the words at present defining the wood-working machinists, and that the rate of pay for overtime for wood sawyers and wood-working machinists inserted in the list be as follows—From leaving-off time to 6 p.m., ordinary rate; from 6 p.m. to 10 p.m., time and a quarter; after 10 p.m., double time; Saturdays, noon to 4 p.m., time and a half; Saturdays, after 4 p.m., and Sundays, double time."

The recommendation was agreed to, and the Council adjourned shortly afterwards.

NEW THEATRE, COLCHESTER.—A new theatre, to seat 1,100 persons, is to be built at Colchester, on a site in the High-street. Mr. J. W. Start, of Colchester, is the architect.

Illustrations.

A SKETCH DESIGN FOR A MODERN ANGLICAN CATHEDRAL.

WE give this week the side elevation, plan, and sections of the sketch design for a modern Anglican cathedral by Professor Beresford Pite, which formed No. 53 in the drawings submitted for the Liverpool Cathedral competition.

In the review in our issue of July 26, when the names of the authors were not disclosed, we pointed out this as a design the author of which ought to have a place in the final competition.

The following is a reprint of most of Professor Pite's Report explaining the motives of the design :—

"With regard to the sketch-design submitted herewith, I would indicate the following motives in its preparation :—

1. Congregational planning by the obtaining of a great area of unobstructed vision.

2. A central and dignified position for the conduct of public worship, the choir, or clerks, being placed technically architecturally in the middle of the church, and the lectern immediately upon the axis of the plan. The holy table occupies a position in front of the whole congregation, and though enclosed by the chancel, is visible to all in the church.

3. The cathedral is planned as the centre of the organisation of the ministry. The presbytery is spacious enough for the whole clerical body of the diocese, with the Bishop's cathedra at the head.

4. Access and egress. The comfort of great congregations, and the enlarged usefulness of the cathedral buildings have indicated the use of a great narthex with entrances on all sides.

5. Two side chapels, which are moderate sized churches, are provided one on each side of the nave and with vestries for the purposes of home and diocesan services and foreign mission services.

6. The baptistery is placed in the great attached entrance tower, in which is provided a total immersion font, with the required vestries, the position corresponding with early Christian usage.

7. The chancellors and diocesan secretaries, chambers and the societies' offices are placed on each side of the atrium and form separate suites opening from the cathedral porches.

8. Staircases lead to the galleries of the cathedral from the narthex, into which all the foregoing open.

9. In the upper story of the narthex are situated at opposite ends the consistory court, communicating with the suite of chambers over the chancery ; and

10. The conference hall for diocesan meetings and mission gatherings in connexion with the suite of rooms over the offices below.

11. The central block over the narthex, occupying the length of the end of the cathedral, being the diocesan library and reading-room. This is a large top and side lighted gallery.

12. The lavatories, which modern comfort demands, are placed near and opening to the narthex, but outside the cathedral proper.

13. At the presbytery end of the cathedral are placed on the right the sacristy and vestries and strong rooms over.

14. Communicating with the choir school and music-room.

15. On the left of the presbytery is the chapter house for the capitular meetings, with vestries and private rooms over.

16. The organs of the cathedral are placed in the two angles of the nave piers of the dome, close to the choir and central to the whole congregation.

17. Beyond the presbytery is the clergy cloister court containing :

18. The cathedral choristers' school.

19. The theological college.

20. The episcopal residence.

21. And such extensions for canons' and precentors' residences as may be required.

Architectural Treatment.

The style of the design has arisen wholly from the plan which attempts to reflect, as the Church of England, the whole history of the Christian age. I feel that it would be untrue to its purpose to found it wholly on an archæological basis or upon a narrow view of Mediæval religious art, the requirements of the present being developments in unity with the past. From this view has arisen the problem of proportioning heights and supports to enclose the plan without needless intermediary supports designed only as architectural fancies. The modern knowledge and use of concrete domed construction, exemplified in many buildings, and specially in the new Roman Cahedral at Westminster, I feel cannot be put aside in a rational architecture, and, therefore, have employed large vaults and domes.

The dome, naturally proportioned to internal requirements and emphasised externally by the buttressings and piers, has been used. Towers have been grouped to accentuate the manifold parts and interests of the building around the central mass of the dome and along its flanks combining the adjacent subordinate buildings. The great tower, the chiefest in the diocese and city, marks the character of the building and rises in and from the group with freedom owing its detachment on the plan.

The architectural detail is spared from any reproduction of mere antiquarian forms—wherever meaning is associated with detail as in carved capitals, bases, and string courses it is freely used. Decoration is thus set free from the insufferable bondage of the dark ages of figure design and drawing. Simple directness of expression with perfect drawing, I am persuaded, can be accomplished to-day when passing fashion is put aside and the finest work of the best artists only desired. Mosaic inlay and in marble sculptury, in simple painting or in stone and wood carved with individual power, such as the revived craftsmanship of our generation is producing, provides a decoration illustrative of our age and its powers.

I shall cherish the hope that this great new cathedral of our time will establish a school of powerful English art concentrated and guided to unity of effect, yet free from the limits of an imitative revivalism alien alike to the genius of the people and to the highest meanings of religious buildings, and I trust that to such an ideal as this the unequalled opportunity that presents itself may be earnestly devoted."

DESIGN FOR A FRIEZE : THE CANTERBURY PILGRIMS.

THIS design, by Mr. W. A. Chase, received deservedly a silver medal in this year's National Competition at South Kensington, and we are glad to add that it has been executed as an interior decoration for the entrance-hall of a vicarage in Camden Town.

As a reduction of the personages of Chaucer's poem to a decorative picture it is very meritorious, and shows that the author has bestowed a good deal of thought on the endeavour to realise and distinguish the personages as described by the poet. We do not, however, quite like the figure of the Squire, who was a fop, but a gentlemanly fop—

"Curteis he was, lowly, and servisable,"

whereas in the drawing he looks rather conceited and impertinent. It was a good idea to distinguish the manners of the Prioress and the Wife of Bath by representing the one seated sideways on her horse, the other riding astride in stirrups—the manner in which women usually rode at that period, before the era of side-saddles ; but one may imagine that a lady so refined and gentle as the Prioress might have been an exception in that respect—a lady in advance of her time. We congratulate the artist on a very clever production.

ARCHITECTURAL SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND.—The first general meeting of this Association for the present session was held on the 7th inst. in the Grosvenor Hotel, Dublin. Mr. F. G. Hicks, President, occupied the chair. The annual report was read by Mr. Beckett, one of the hon. secretaries, and briefly recounted the work of last session and the various lectures delivered by prominent members of the profession. The report recorded regretfully that the attendance at the classes last year was not all that could have been desired. In membership and finance the Association was in a flourishing condition. —Mr. Holloway moved the adoption of the report. Mr. Allberry, in seconding the motion, suggested that another secretary should be appointed to take charge of the reports for the technical and daily papers. He also thought it would be a good thing to try and get the Irish Institute of Architects to hold examinations. They could then draft a syllabus which pupils would be ready to take up in order to be examined in Ireland on Irish lines. The report was adopted. Prizes won during the past session were then distributed, the following being the successful competitors :—

Architects' Institute Prize.—Mr. John Knox Vinycomb.

The Doolin Prize.—Mr. John Knox Vinycomb.

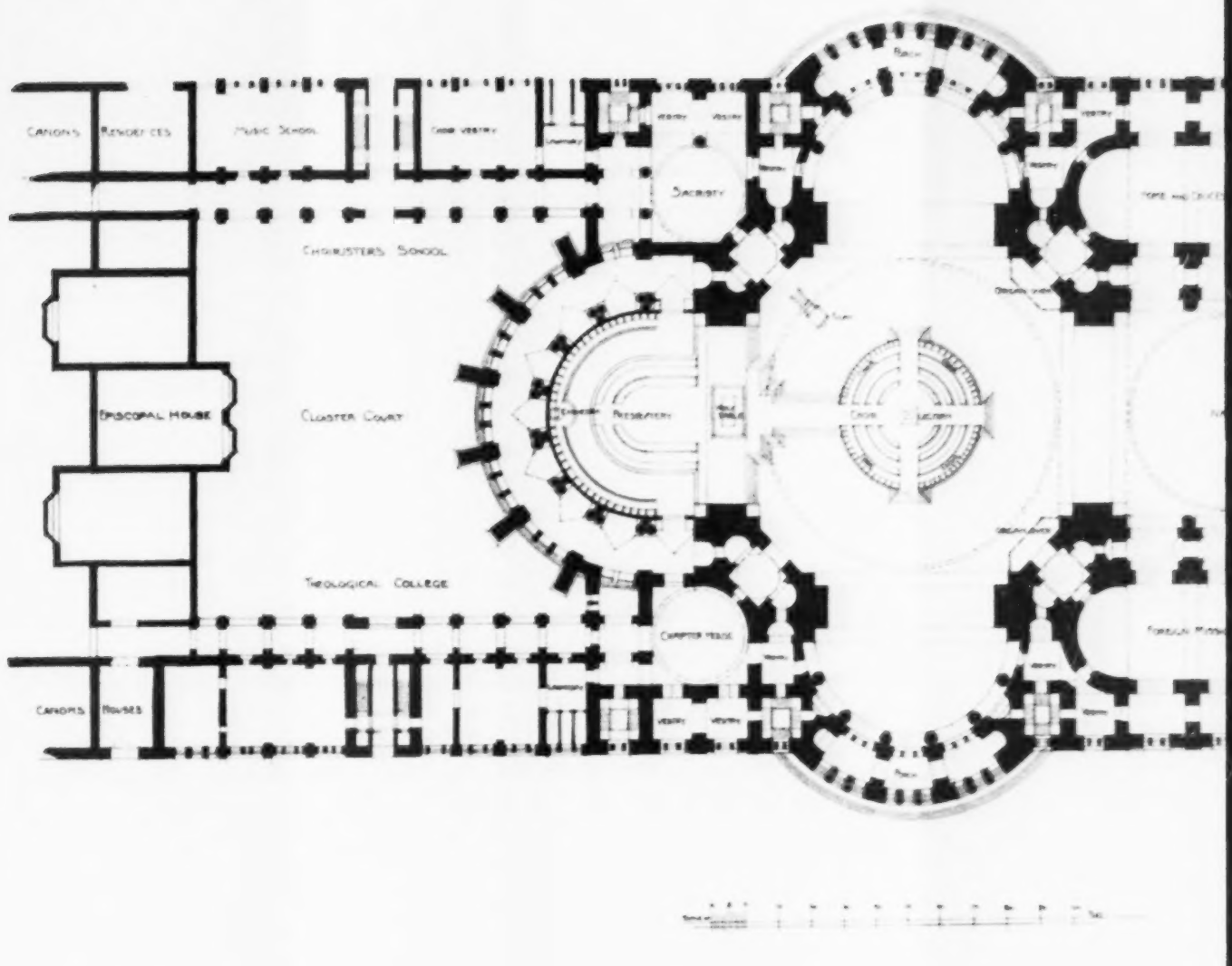
The Beckett Prize.—Mr. F. H. Tallan.

First Prize : Class of Design.—Mr. F. H. Tallan.

Second Prize : Class of Design.—Mr. G. Hamilton Barlee.

The President then delivered his inaugural address, which contained many valuable suggestions for the improvement of the profession. In the course of his remarks the President said he was not going to bring forward any very new or startling ideas. He proposed to talk of themselves, and address his remarks chiefly to the younger members of the Association. The education of students in the past had been practically *nil*, and even now it was of a more or less haphazard and imperfect description, and the chief object of the Association was to promote and afford facilities for the study of architecture, which was a very comprehensive word. It took the London Association fifty years to discover that their educational system was not all that could be desired, and a revolution resulted in their present apparently complete and up-to-date system. They should profit by that experience, and look for defects as they went along and supply the necessary improvements if possible. They had difficulties here to contend with of which they knew nothing in London. Their little roll of 131 members, compared with that of London of 1,400, seemed ridiculously small, and any falling-off in classes or meetings was at once apparent. From their very scarcity of members it behoved each one to do his utmost to make their teaching a credit to Dublin in particular and Ireland in general. One of the chief defects of their system, so far as he could see, was that it was practically aimless. They commenced each session with exactly the same kind of subjects, advanced a certain distance, and then stopped. All this, to his mind, was wrong. A student, perhaps serving his four years' articles, could not possibly learn all there was to know about a subject in one session, and yet they could not expect him, however necessary it might be, to go over the same ground year after year. He thought if they were to be of any real benefit as an educational body they should formulate a proper curriculum of study, spreading over two or three sessions, commencing with elementary subjects and concluding with those more advanced, and at the end let there be a test as to what the man had learned. Mr. Hicks also drew attention to the necessity of accurate drawing and draughtsmanship, and laid special stress on the value of sketching to the architect.

LIVERPOOL ARCHITECTURAL ASSOCIATION.—The first ordinary meeting of the Liverpool Architectural Society's fifty-fifth session was held on the 6th inst., the new President (Mr. John Woodfall) presiding. In his opening address he referred to the incorporation of the Society last year with the Royal Institute of British Architects, an event which would, he maintained, be far-reaching and important both to the members individually and the Society. "Another bright event has also occurred which adds honour to our Society. His Gracious Majesty King Edward VII. has conferred the Coronation honour of knighthood on the past-President of the Royal Institute of British Architects—a testimonial to the personal worth of Sir William Emerson, and an honourable tribute to our profession." A notable function during the coming year would be the holding of the annual conference of the Royal Institute of Public Health in Liverpool next July. The proceedings would be of the utmost interest to architects, and he trusted that among the subjects discussed would be that of the prevention of smoke in great cities. This problem must be faced by the municipal councils in the same determined manner, and with like results, as that of drainage, removal of refuse, pure water supply, artisans' dwellings, &c., for the public benefit and health. That this black cloud should be hanging about destroying health and everything else it touched could not be tolerated much longer. It was a filthy and dangerous nuisance. If remedial measures could be accomplished he believed it would beneficially influence architecture to a very great extent, and possibly coloured studies of permanent decorative materials would then partially supersede the columns, &c., of the present stone construction. The public improvements which were now being so vigorously proceeded with in Liverpool were providing opportunities for our architects to beautify and enrich the city, and he thought they were proving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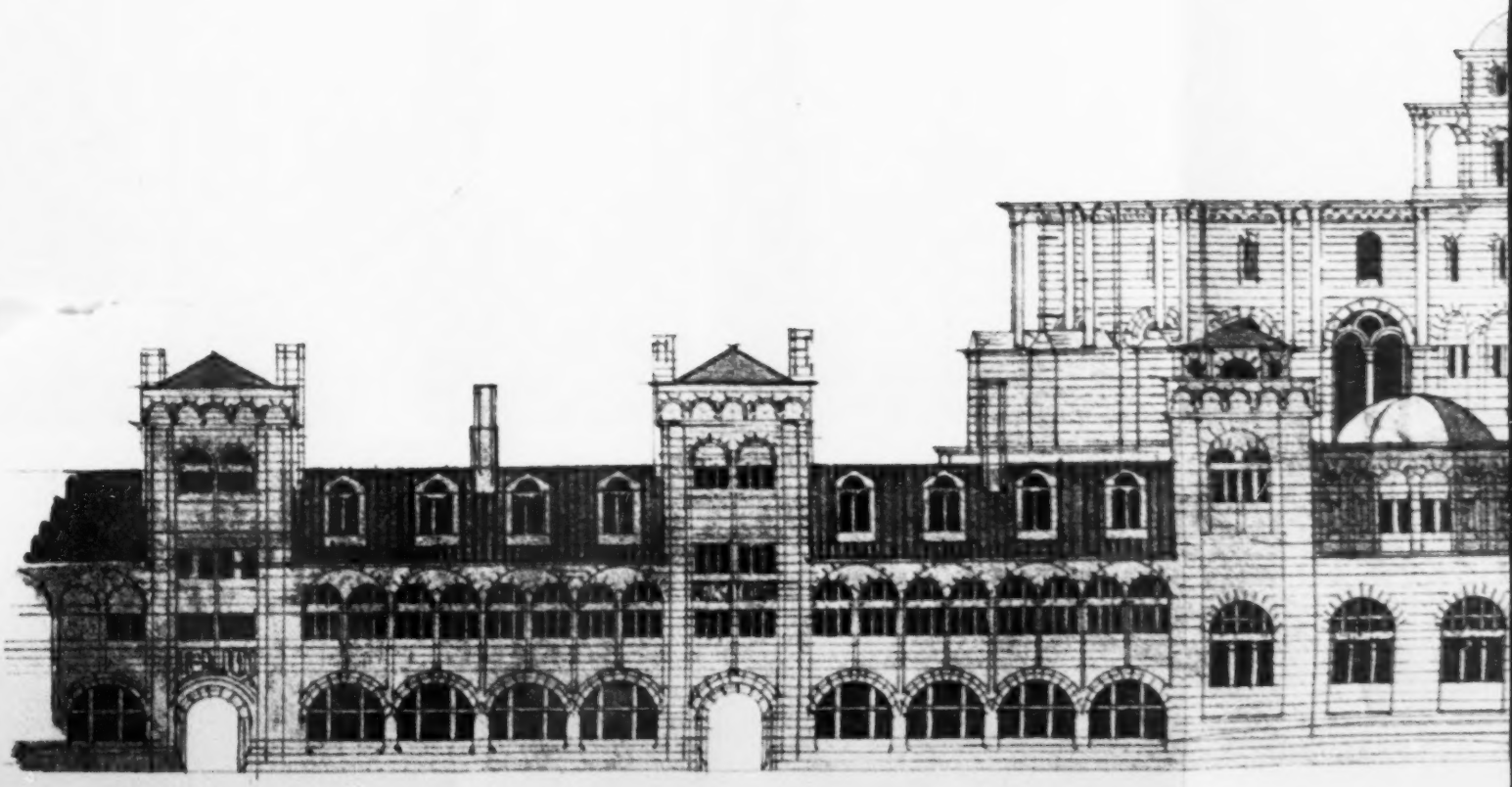
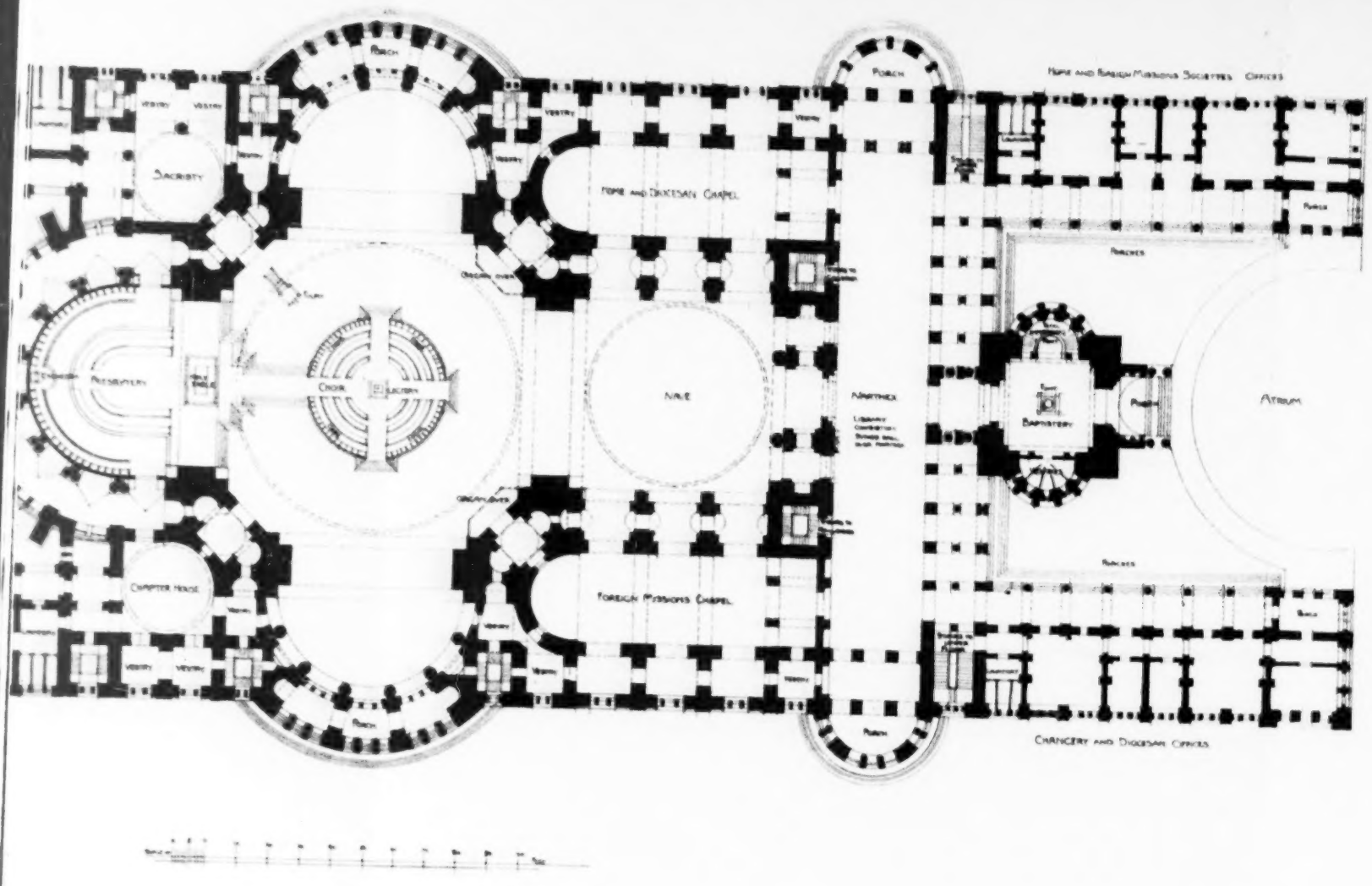
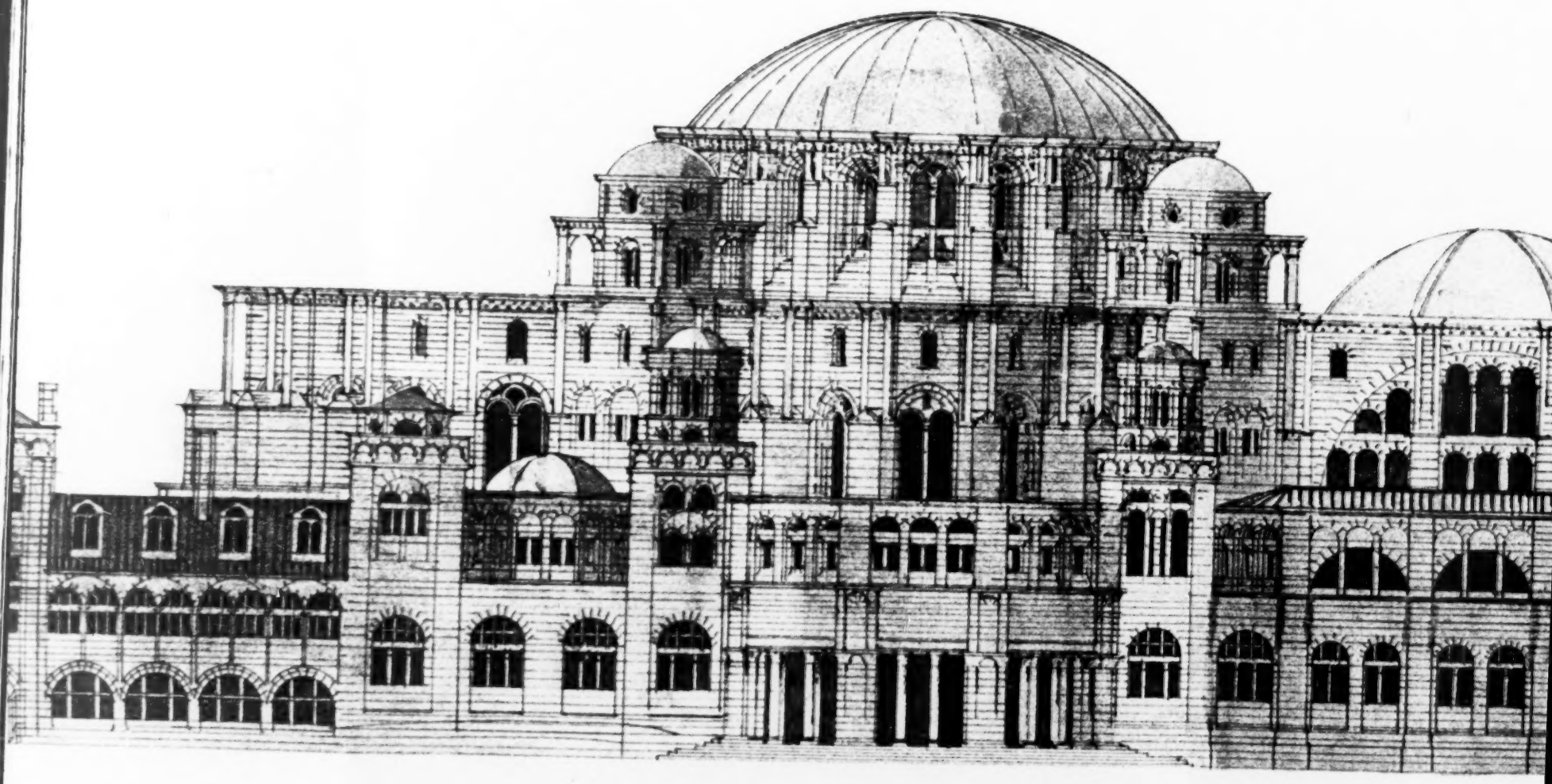
Sacristy
Choristers School
Episcopal House
Cloister Court
Presbytery
Theological College
Chapter House
Canons Houses







SIDE ELEVATION

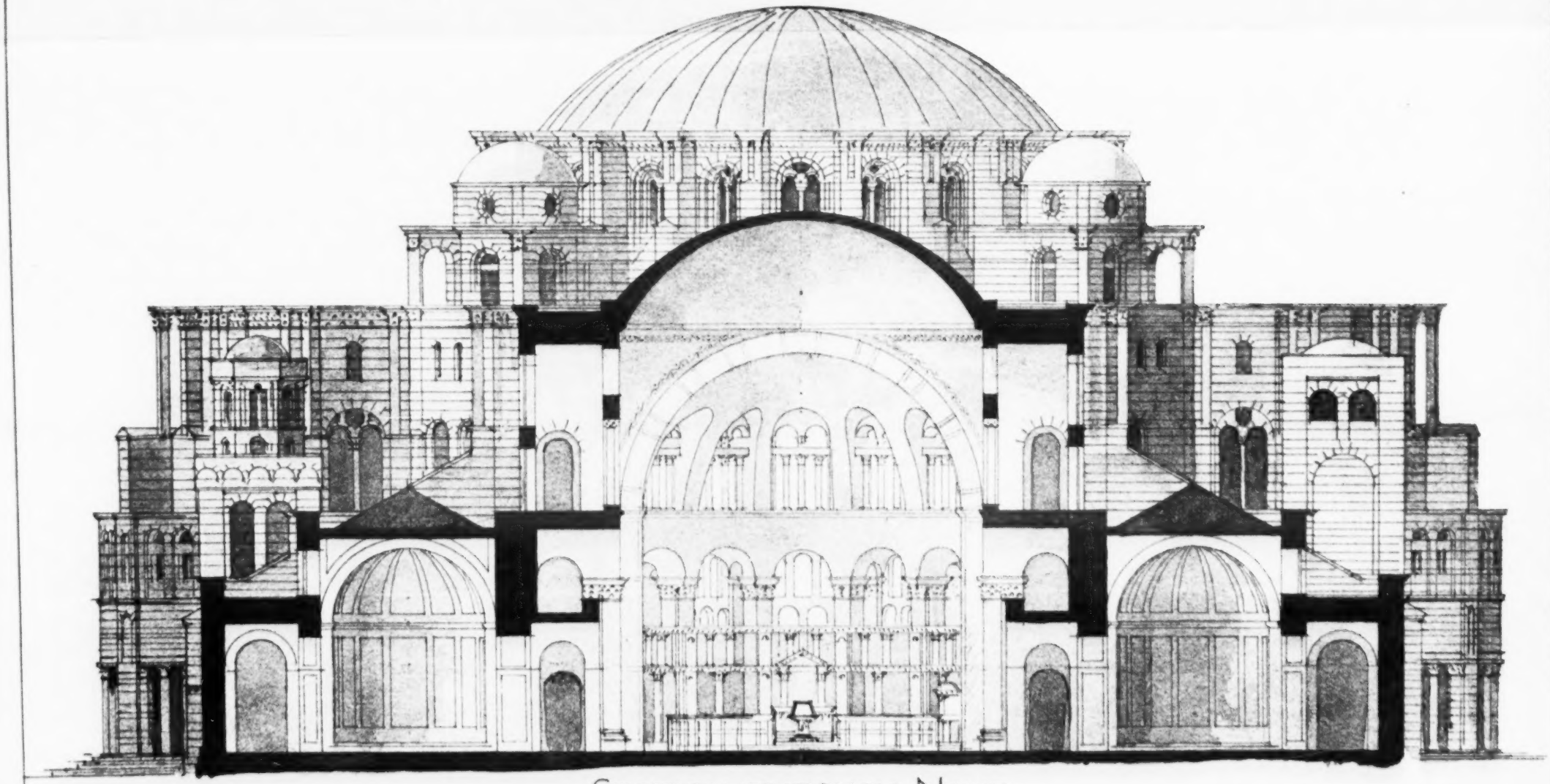
SCALE OF 10 5 0 10 20 30 40 50 60 70 80 90 100 FEET

BERESFORD PITE.
ROYAL COLLEGE OF ART
LONDON S.W.

N.K. PHOTO SPRAGUE & C° L^TD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

SECTION THROUGH CROSSING
LOOKING TOWARDS NAVE

SECTION THROUGH CROSSING
LOOKING TOWARDS NAVE



SECTION THROUGH NAVE
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SCALE OF 10 5 0 10 20 30 40 50 60 70 80 90 100 FEET.

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A SKETCH DESIGN FOR A MODERN ANGLICAN CATHEDRAL (No 53 IN THE LIVERPOOL CATHEDRAL COMPETITION)

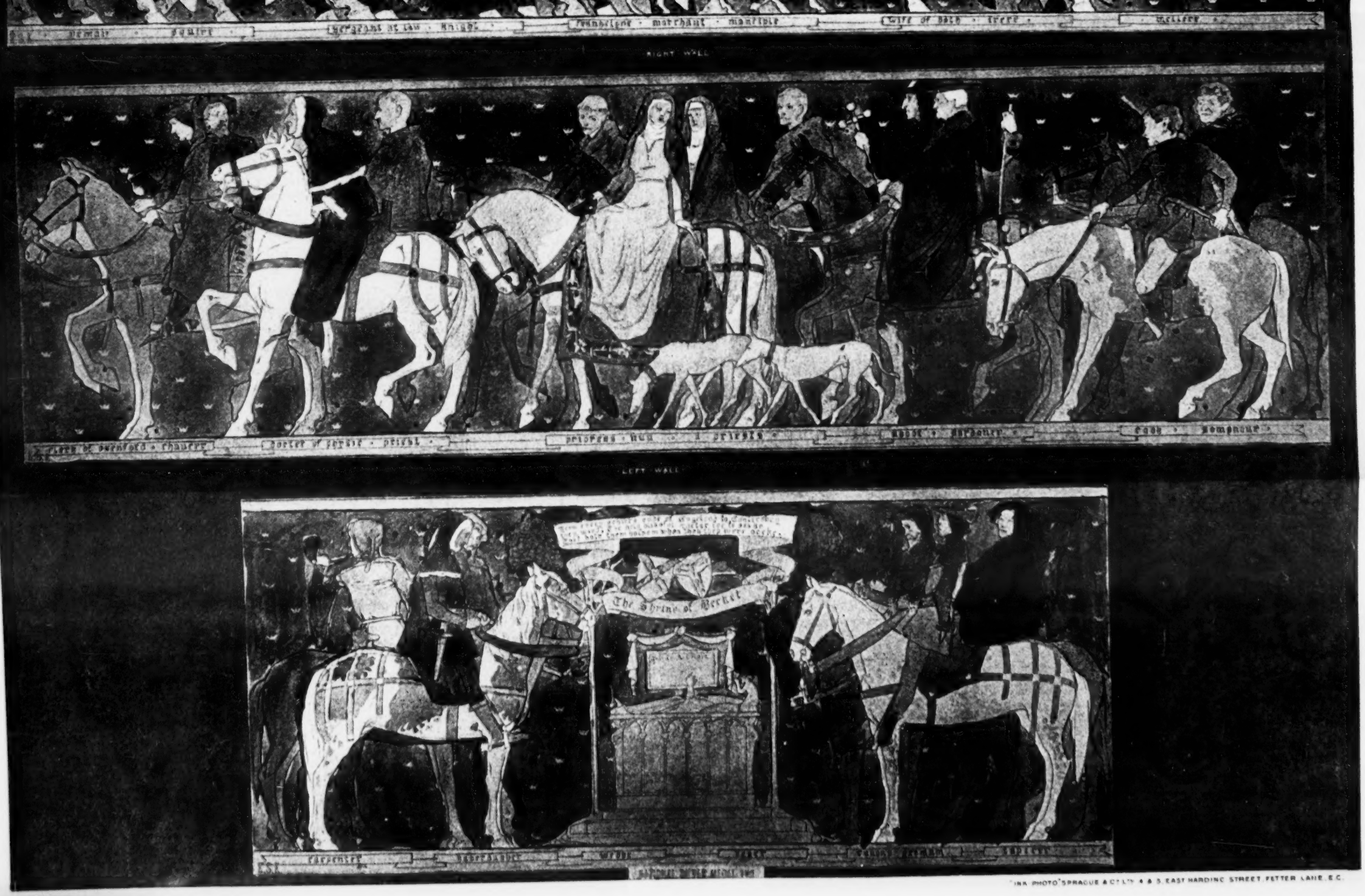
By Professor Beresford Pite, F.R.I.B.A.

DESIGN FOR A PAINTED FRIEZE FOR THE DECORATION OF AN ENTRANCE HALL

SCALE 2 IN TO THE FOOT

WALL OPPOSITE ENTRANCE

RIGHT WALL



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DESIGN FOR A FRIEZE: "THE CANTERBURY PILGRIMS."—By Mr. W. A. Chase

Silver Medal, National Competition, 1902

themselves well worthy of the opportunities. Dealing with the cathedral question, Mr. Woodfall expressed delight that the city had decided to have a cathedral worthy of its position as one of the great cities of the kingdom. This effort, he remarked, will be one of the greatest modern monuments that has been attempted since the Reformation, and will in time to come be a realised certainty. "You may probably remember that this Society opposed the site now adopted, but our proposal was over-ruled on the plea of expense. The St. James's site is now settled, the preliminary competition has also been decided, and the names of the competitors selected, and it is a matter for congratulation that our county town (Lancaster) has a firm of architects who have been chosen, and that one of the members of our own Society has won the honour of being highly commended for his scheme. May the final result be worthy of religion, its beauty a glory to our city; may it excite the public to possess one of the finest religious edifices in the world, the most perfect example of the most perfect period of art, being best fitted for the Christian worship of the present day. May all of us see the happy day when the foundation-stone of such a temple is laid, and may some of the present generation see it realised. In concluding, I hope our Society will maintain—nay, increase—its high position, and tend to promote good fellowship amongst its members, a help to those that may require same, as well as to rejoice with those that achieve success; and, further, that its members will enrich our city with a collection of beautiful buildings, the outcome of the genius of the members of this Society." On the motion of Professor Simpson, a hearty vote of thanks was tendered to the President for his address. Subsequently a revised schedule of charges was submitted for discussion and approval.

ENGINEERING SOCIETIES.

Institution of Civil Engineers. — The Council of the Institution of Civil Engineers have, in addition to the medals and prizes given for communications discussed at the meetings of the Institution in the last session, made the following awards in respect of other papers dealt with in 1901-1902:—A Telford gold medal to Mr. J. Macfarlane Gray (London); a George Stephenson gold medal to Mr. R. Price-Williams (London); a Watt gold medal to Mr. W. Bell Dawson, M.A., D.Sc. (Ottawa). Telford premiums to Mr. W. R. Cooper, M.A., B.Sc. (London); Mr. E. M. De Burgh (Sydney, N.S.W.); Mr. George Wilson, D.Sc. (Manchester); Mr. Frank Oswell, B.A. (Buenos Ayres); Mr. A. W. Brightmore, D.Sc. (London). A Crampton prize to Mr. C. D. H. Braine (Mowbray, Cape Colony); and the Manby premium to Mr. B. W. Ritso (Cape Town). For students' papers the awards are:—A Miller scholarship (tenable for three years) and the James Forrest medal to Mr. H. F. Lloyd (Birmingham). Miller prizes to Mr. J. C. Collett and Mr. W. H. C. Clay (London); Mr. H. C. M. Austen (London); Mr. A. M. Arter (London); Mr. Robert Bruce (Manchester); Mr. L. F. Wells, B.Sc. (Manchester); Mr. W. H. McLean (Glasgow).

COMPETITIONS.

Municipal Buildings, Deptford. — Mr. John Belcher, A.R.A., the assessor appointed by the Metropolitan Borough Council of Deptford to adjudicate upon the designs submitted in the competition for the new town hall and municipal buildings, has made the following award:—First (Design No. 3), Messrs. Lanchester, Stewart, & Rickards, 1, Vernon-place, Bloomsbury-square, W.C.; second (Design No. 32), Messrs. S. B. Russell and C. E. Mallows, 11, Gray's Inn-square, W.C.; and third (Design No. 27), Mr. A. J. Gale, 4, Serjeant's-inn, Fleet-street, E.C. The drawings will be exhibited on Friday, the 17th inst., from 10 a.m. to 5 p.m., at Sayes Court Hall, Evelyn-street, Deptford.

Gravesend School Board.—The result of a limited competition for a new school in Northcote-road, Gravesend, to accommodate 1,000 children, was announced last week. The professional assessor, Mr. Bond, of Rochester, placed first design No. 3, which proved to be that of Mr. J. J. Robson, of Suffolk House, E.C., and Gravesend. We understand that it has been decided to exhibit the competitive designs at an early date in the Gravesend Town Hall.

Cottage Homes for Nurses, Grantham.—We are informed that, in response to the advertisement of the Committee appointed to carry out the Memorial to her late Majesty Queen Victoria, seventy-seven designs for the Nurses' Home, to be erected in Castlegate, were submitted, out of which the designs of the following gentlemen were selected:—Mr. R. J. Girling, Buckminster; Mr. H. L. Fedden, 11, Hart-street, Bloomsbury, London, W.C.; Messrs. Ashton & Gibbs, 39, Poland-street, Oxford-street, London, W.; Mr. E. Winter, 19, Britannia-road, Liscard, Liverpool; Mr. W. J. Dunham, 16, The Walk, Norwich; and Mr. J. A. Mettham, Grantham. The final choice eventually fell upon Mr. Girling's design.

LONDON TOPOGRAPHICAL SOCIETY.

Lord Rosebery presided on Wednesday evening at the Rooms of the Society of Antiquaries, Burlington House, over the fourth annual meeting of this society.

Mr. Bernard Gomme (Hon. Secretary) submitted the annual report which stated that the membership, which continued slowly to increase, was now 130. The total number of institutions in the United Kingdom—including public libraries, Government departments, local governing bodies, and learned societies—that had joined the society was twenty-eight, and to these had to be added five American bodies. A matter accomplished in the past year had been the successful production and issue of the first number of the society's official organ, "The Annual Record." Here the need for increased resources was greatly felt. As a register of topographical changes in the period dealt with, its inadequacy was only too apparent. However, the little effort was in the right direction, and it was welcomed with warm appreciation, not only by their own members, but also by the press, several reviews dwelling on the usefulness of this feature of the society's work and urging the enlargement of its scope. If the society could supply a complete and authoritative yearly record of the demolitions and changes in London, there would, indeed, be little doubt that the work would be highly and widely esteemed; but for such a result both money and workers alike were needed. In the second issue of "The Annual Record" some account would be given of the demolition of Christ's Hospital and of Newgate Prison, and, if possible, the index entries relating to other demolitions and changes will be more complete. But before this department of the society's work could be at all equal to the occasion, at least 200 more subscribers were needed. Of other publications for the present year, which were nearly ready and which will shortly be issued, it must be said that a further instalment of the sheets of the Kensington Turnpike plans would be welcomed by subscribers, while the map by Hollar, showing the western-central district of London as it was in the days of Charles I., would, on account of its elaboration and detail, prove to be one of the most interesting issues yet made by the society.

Among the matters left over for decision by the new Council was the offer of a miscellaneous collection of London illustrations, of no particular value, but the fact of its being forwarded for acceptance by this Society was an interesting indication of the advantages of a centre to which such things must gravitate instead of being frittered away or lost. A similar instance was the offer of a collection of lantern-slide pictures of London at about the period of the 1862 Exhibition which they have likewise received. It was significant of the rapid change of modern London that such pictures were distinctly of historical interest. Mr. J. P. Emslie had also presented to the Society a proof of his etching from his own drawing of the statue of James II. as it appeared in its original site in Whitehall-place. The Council had also received the donation of a book of special interest in connexion with the Society's reproduction of the Kensington Turnpike Trust plans, viz., "The Memorials of Knightsbridge," by the late H. G. Davis, edited by Mr. Charles Davis, a member of the Society. This might serve to revive the idea of a library of London books for circulation in the Society. Several books were presented to the old Society, which would be available if a library were formed, and members possessing duplicate copies or books they no longer required might be glad to present them to the Society if invited to do so. In this way a small lending library of real usefulness might easily be added to the privileges of members of the London Topographical Society. The subject was recommended to the best attention of the new Council.

Mr. Lawrence Gomme, F.S.A., in moving the adoption of the report, said he thought the Society hardly took sufficient credit for what it had done and what it was doing. There were also various ways in which the Society might work. For instance, there were in London many maps, some of which were exceedingly rare, and it was the object of the Society to reprint these maps so that they might be bound in one portfolio. There were also the manor maps and the tithe maps of London which might be reprinted. With regard to the discoveries of Roman relics, they knew that they were scattered about in all directions, and it would be a good thing if there was one place where the whole of these things might be put together and a map of Roman London compiled. It would also be a good thing if the Society could compile an index of London matters dealt with in old records.

Lord Belhaven and Stenton seconded the motion, and pointed out that the reason why they could not do the things mentioned by Mr. Gomme was the want of money.

The report was adopted.

Mr. Jackson Barron, F.S.A., in moving a vote of thanks to the Council, congratulated the Society on the issue of the Kensington Turnpike plans, and said he recollected as a child being taken by coach to Kensington, and after dinner at one o'clock the servant was sent out to book two seats by the six o'clock stage coach for the return journey.

Mr. Walter L. Spiers, A.R.I.B.A., seconded the motion, which was carried.

Sir J. McDougall proposed the re-election of the Earl of Rosebery as President of the Society.

Mr. H. A. Harben, F.S.A., seconded the motion, and remarked that while it was difficult to allow sentiment to stand in the way of public improvements, yet they were all shocked at the way in which, in numerous instances, records of the past had been swept away thoughtlessly and uselessly.

The motion having been agreed to,

Lord Rosebery, in expressing his thanks for his re-election, said he had not been able to give the time he should have liked to the work of the Society. Sir J. McDougall had alluded to his connexion with the London County Council, and he noted that there were four gentlemen present that night who had filled the office of Chairman of that body, which showed that the London County Council recognised how important might be the effect of such a society as theirs. Mr. Gomme had lamented that the Council of the Society had not done more, and had not aimed at more. That was hard upon the Council, because that body had evidently in its deliberations had the homely proverb before it of cutting their coat according to their cloth, and it was quite obvious if the public did not supply enough cloth for a waistcoat, they could not aim at rigging themselves out in a coronation robe. So far as he could judge of the letters he received, the principal occupation of one half of the human race was the urging of the claims of their particular hobbies to the other half, but in urging the claims of the London Topographical Society, he could say it was no more his hobby than the hobby of any one of the inhabitants of London. He should have thought there would have been thousands and thousands of persons in London interested in the past history of that great capital, but he thought that the society did not sufficiently advertise itself, and success without advertisement in these days was a hopeless achievement. Were the Metropolitan Borough Councils subscribers to their society in their corporate capacity? At that moment, owing to the beneficent action of a Scotch-American millionaire, there were libraries springing up all over Great Britain as "armed men springing from the dragon's teeth," but with more beneficent effect. How many of these libraries were subscribing their guinea? There were about a dozen, and what was that amongst so many. Yet in one year they had received the support of no less than five American libraries, whose sympathies had reached across the Atlantic to the capital home of their race. He did think those facts were only to be known for many persons to sub-

scribe. After all, London was changing before their eyes. It had been changing during the past quarter of a century with inconceivable rapidity, and that rapidity had been doubled and triplicated since the advent of the L.C.C. What ancient streets it was going to cut through for the great avenue for which they could not find a name; what were the demolitions entailed by that immense crescent which all the sagacity of their municipal legislators had failed to christen, he dared not reckon. But he did not doubt that in the minds of the three Chairmen of the L.C.C. at that moment there must be a guilty feeling that the march of utility was going to stamp out some venerable dwellings in several districts which the dwellers in London would gladly have spared had it been possible. Surely, then, the least they could do was to preserve for their descendants an exact picture of what was. He did not profess to be an expert, but he never came across the print of an old house, such as Bedford House in Bloomsbury-square, with its political associations, or the old Whitehall Palace, without feeling inclined to preserve it, and so to give to this Victorian and Edwardian London which they inhabited some flavour and aroma of the historical London of the past, without which, after all, so much of our political history is unintelligible. Then, with regard to the old maps, in some cases only one or two copies existed, and therefore it was desirable that copies should be made in the interests of the public, in case by sudden accident or fire the original maps might be destroyed. It was a public-spirited work, which deserved the encouragement of the people of London. Another thing they should aim at was the culling from various volumes, such as the publications of the Master of the Rolls, such passages as had reference to London, and which only extreme and diligent exploration would enable the student to find for himself. There ought to be a London library—he meant a library of books relating to London; reprints of scarce volumes, and excerpts from massive volumes which do not altogether relate to London—which a Society like that might bring into being. It had been the great spiritual function of the London County Council, apart from its material efforts, to make them feel the unity, splendour, and historic association of London as a whole. Well, in their humble way, although they had not the power and the dignity of the London County Council, they might do much to advance that work, and it was for that reason he was proud to accept the offer they had made him to remain, inefficient as he was, President of the London Topographical Society.

Col. W. F. Prideaux, C.S.I., moved:—"That this Society strongly urges upon the London County Council systematically to preserve objects and places of historic interest to Londoners under the powers conferred by the Acts of 1899 and 1900, and in particular expresses the hope that the new street from Holborn to the Strand may not be proceeded with until efficient steps are taken to preserve relics and objects of interest and to put on record the particulars of their locality." He said that with regard to the first part of the resolution the Council did not require much urging. As regarded the new street from Holborn to the Strand there were not many objects of historical interest in danger, but in the Arch-row, Lincoln's Inn Fields, they had work of Inigo Jones. Some architects wished to place grand new buildings on the sites of old historic buildings, and such would undoubtedly be the case if Lindsey House were allowed to be destroyed.

Mr. H. B. Wheatley, F.S.A., seconded the resolution, and said the whole of Arch-row was designed by Inigo Jones, and a few of the houses as he designed them were still there. The two greatest architects they ever had were Inigo Jones and Wren, and they had many works of Wren. Besides the houses in Arch-row, there were two houses in Great Queen-street which he would be sorry to see pulled down, as they were the finest bits of street architecture in London. If the houses in front could be taken down and the old houses restored, it would be a grand work.

The resolution was carried.

In moving a vote of thanks to the Chairman, Mr. W. H. Dickinson said that the changes in London at present going on were more extensive than they had been since the great fire, and it was most important that in every way possible a picture of what had been should be preserved.

Mr. C. Foster Hayward seconded the motion, which was carried.

Lord Rosebery, in reply, suggested that the Society might have field days like the archæological societies, and visit places which were about to be changed.

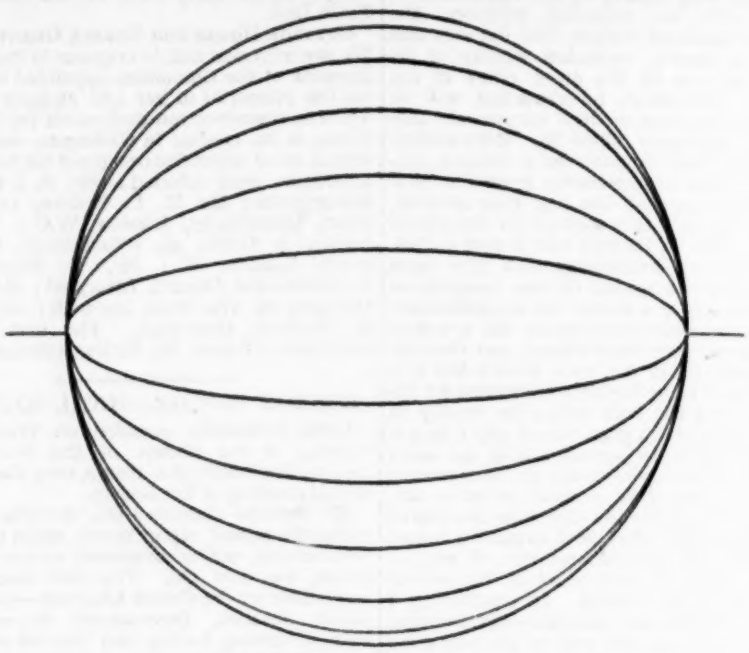

Diagram of Ellipses Drawn by the Aid of String.

Correspondence.

DRAWING AN ELLIPSE.

Sir,—I have just set out the enclosed, and hope it may be of some interest. The figure, excepting the enclosing circle, was entirely formed with a piece of string [see diagram on this page].

No extraordinary care was expended upon it, and it seems to me that it is quite possible to draw an ellipse of any reasonable size by this means.

R. Ramm.

*** Messrs. Knox & Wells, contractors, of Cardiff, write to ask how the name of their firm came to be at the end of the letter which started the correspondence on this subject. The signature was not that of any firm, but merely an assumed one, and it appears to have been an accidental coincidence between the assumed name and a real one.—Ed.

A NOISY FLOOR.

Sir,—A ground floor of a schoolroom laid in the ordinary way—sleeper-walls, sleepers, joists, and floor-boards—is some 3ft. 6 in. above the ground, and this large hollow creates great noise. Could any of your readers kindly tell me if they know of a cheap scheme to overcome the annoyance? The cost of taking up the boarding, filling the space, and laying block flooring is prohibitive. Would a layer of thick felt suspended over the surface, by being nailed to undersides of joists, be any prevention?

Leon.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

The London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Line of Frontage and Projections.

Lewisham.—A theatre building on the site of Nos. 211 and 213, High-street, Lewisham, to abut upon Hither Green-lane (Mr. H. M. Wakley for Mr. Gilbert).—Consent.

Strand.—An iron and stone balcony at the first-floor level in front of No. 7, St. James's-street, St. James's (Messrs. J. Kinninmont & Sons for Messrs. Glasier).—Consent.

Lewisham.—Four houses on the east side of Shell-road, Lewisham, northward of No. 11 (Messrs. Hodson & Whitehead for Messrs. Hodson Bros.).—Consent.

Lewisham.—A temporary greenhouse on the south-west side of London-road, Lewisham, westward of the shops known as "Imperial Buildings" (Messrs. Furness Bros.).—Refused.

Width of Way and Line of Frontage.

Kensington, South.—Buildings, with bay windows, on the west side of The Grove, Old Brompton-road, Kensington (Mr. P. Hoffman for Mr. T. W. Brown).—Consent.

Space at Rear.

Poplar.—A modification of the provisions of Section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of three houses on the site of Nos. 72 and 74, High-street, Poplar, with irregular open spaces at the rear (Mr. J. Clarke).—Consent.

Line of Frontage and Space at Rear.

St. George, Hanover-square.—An additional story, with projecting bay window, upon the existing one-story building at the rear of No. 12, Park-street, St. George, Hanover-square, abutting upon Aldford-street (Mr. W. D. Caroe for Mr. A. Thorne).—Consent.

Line of Frontage and Construction of Building.

Hackney, South.—Retention of a wood and canvas shelter of a temporary character on a portion of the forecourt of No. 19, Lea Bridge-road, Hackney (Mr. J. Perkoff).—Refused.

Deviation from Certified Plans.

Bethnal Green, South-West.—Deviations from the plans certified by the District Surveyor under Section 43 of the Act, so far as relates to the proposed erection of two buildings on the site of Nos. 32 and 34, Artillery-street, Bethnal Green (Mr. L. G. Hasluck for Mr. R. Sonenfeld).—Consent

Formation of Streets.

Battersea.—That an order be issued to Messrs. Crossman, Prichard, & Co. sanctioning the formation or laying-out of a new street, for foot traffic only, to lead from Henry-street to Home-road Battersea (Messrs. Mann, Crossman, & Paulin, Ltd.—Consent.

Woolwich.—That the Council, at the request of Mr. F. Bethell for the Royal Arsenal Co-operative Society, Ltd., do approve a deviation from the scheme sanctioned for the formation of streets on the Suffolk Place Farm and Bostall Farm, Abbey Wood, so far as relates to an increase in the width of Basildon-road at its southern end.—Consent.

Means of Escape from Top of High Buildings.

City.—Means of escape in case of fire, proposed to be provided, in pursuance of Section 63 of the Act, on the fifth story of Moorgate Station Chambers, Moorfields, City (Mr. G. Sherrin for Messrs. J. Allen & Sons, Ltd.).—Consent.

Kensington, South.—Means of escape in the case of fire on the sixth and seventh stories of blocks Nos. 2, 3, 4, 5, and 6, and the eighth story of block No. 2, Iverna-court, Wright's-lane, Kensington (Messrs. Metcalf & Greig).—Consent.

Working-class Dwellings.

Bermondsey.—Blocks of dwelling-houses, to be inhabited by persons of the working class and proposed to be erected not abutting upon a street on a

site on the south side of Abbey-street, Bermondsey (Messrs. Humphreys-Davies & Co. for the South-Eastern Railway Co.).—Consent.

*** The recommendation marked † is contrary to the views of the Local Authority.*

The Student's Column.

THE CHEMISTRY OF BUILDING MATERIALS.

16.—Solders and Soldering—Lead Burning—Fusible Alloys.

SOLDER is an alloy used for joining together detached pieces of metal, and must be of such composition that its melting point is lower than that of the metal to be soldered. The molten solder forms a fresh alloy with the metal with which it is brought in contact. Soft solders fuse at very low temperatures, while hard solders melt only at a red heat. The more closely the solder approaches in its properties to the metal to be soldered the stronger will be the joint. Pieces of brass united with soft solder are more easily torn asunder than when united with spelter solder (*i.e.*, brazed). The surfaces of the metal to be soldered must be free from any film of oxide or carbonate, and should be coated with a suitable flux.

Wiped Joints for Lead.—Lead pipes are joined together by having molten solder poured around the ends to be united, the excess of solder being wiped off with a suitable cloth. The ends of the lead pipe before being treated with solder are carefully cleaned and smeared with tallow to prevent oxidation, and a mixture of lampblack and size is smeared around the pipes at a short distance from the ends to be united in order to prevent the molten solder from adhering in a position in which it would be useless.

Soldering Sheet Zinc or Tinned Iron.—Pieces of thin sheet zinc, copper, or tinned iron, may be soldered by sprinkling the cleaned surfaces with powdered rosin or other suitable flux, applying a heated tinned copper bolt or "soldering-iron" to the surfaces to be united, and, at the same time, holding the end of a stick of solder against the soldering-iron, so that molten solder drops upon the hot ends of the metal to be soldered. The best flux for zinc is zinc chloride, prepared by dissolving as much scrap zinc in hydrochloric acid (spirits of salt) as possible, and this solution is sometimes known as *soldering fluid*.

Brazing.—Pieces of brass, copper, iron, or steel may be united by brazing with either spelter solder or silver solder. The cleaned surfaces of the ends to be united are covered with a mixture of borax and granulated solder, and exposed to the heat of a furnace or open fire. The borax fuses and acts as a flux, and the solder also melts, becomes alloyed with the metal upon which it is spread, and when allowed to cool forms a tight joint. When silver solder is used, the surfaces to be soldered are first covered with a strong solution of borax, or with powdered borax, and small strips of silver solder are then placed upon the surfaces, so that when the solder is fused it spreads over the metal, becomes alloyed with it, and forms a perfect joint. The brazing of small work, such as the brazing of a seam in 1-in. iron steam-pipe, is now usually performed by means of a gas blowpipe.

Composition of Solders.—The alloys capable of being used for soldering are innumerable, but the following tables show the composition of some of those most extensively employed :—

Hard Solders.	Per cent. Zinc	Per cent. Copper	Per cent. Brass	Per cent. Silver	Per cent. Copper
Soft spelter solder	50	50	—	—	—
Hard " "	40	60	—	—	—
Soft silver solder	—	—	33	67	—
Hard " "	—	—	—	75	25

Soft Solders.	Per cent. Tin.	Per cent. Lead.
Blowpipe solder....	67 ..	33
Tinman's solder....	60 ..	40
Plumber's solder ..	33 ..	67

Soft solders which contain more tin than lead are known as *fine* solders, while those which contain more lead than tin are termed *coarse* solders. Fine solders melt at a lower temperature than coarse solders.

The fluxes placed on the different metals before soldering or brazing are usually the following :—

Metal.	*Flux.*
Iron or steel.	Borax or sal-ammoniac (ammonium chloride).
Brass and other copper alloys.	Chloride of zinc or ammonium.
Tinned iron.	Rosin or zinc chloride.
Zinc.	Zinc chloride.
Lead.	Tallow or rosin.

Lead Burning.—The process of welding the edges of lead sheets to form acid chambers or water cisterns is usually termed "lead burning," and is performed by applying a small flame to the edges of the metal until the adjacent edges unite by fusion. It was at one time believed that lead burning could only be satisfactorily performed by means of a hydrogen flame, but it has since been found possible to accomplish the work equally well with coal gas, and coal gas is now commonly employed. A very fine blowpipe jet must be used, and a comparatively heavy air-pressure must be obtained by means of a small foot-blower. The air-pressure can be obtained by means of a bellows worked by the arm, but this arrangement is less satisfactory than a foot-bellows worked by a boy while the lead burner concentrates his attention on the fusion of the lead. For light work in lead, such as joining lattice work in leaded windows, the heat of a soldering iron is sufficient to accomplish the required fusion. A soldering-iron maintained at a constant temperature by means of a gas flame fed through a flexible tube is specially manufactured for leaded window makers.

Fusible Alloys.—Alloys having a low melting point are used for fusible plugs in boilers, and also for "fuses" in circuits conveying electric currents, so that if overheating occurs the alloy may melt and the current be broken. Fusible alloys are also sometimes used for small castings. Bismuth is a common constituent of fusible alloys. Bismuth is a brittle reddish-white metal which does not oxidise in the atmosphere under normal conditions. The following table shows the composition of some of the most fusible alloys :—

Melting Point.	Composition.		
75 deg. C....	Bismuth	38·4	per cent.
	Tin	15·4	"
	Lead ...	30·8	"
	Cadmium	15·4	"
92 deg. C....	Bismuth	50	"
	Tin	25	"
	Lead ..	25	"
95 deg. C....	Bismuth	50	"
	Tin	19	"
	Lead ...	31	"
123 deg. C.	Bismuth	33·3	"
	Tin	33·3	"
	Lead ...	33·3	"
171 deg. C.	Tin	66·7	"
	Lead ...	33·3	"
198 deg. C.	Tin.....	23	"
	Lead ..	77	"

It should be noted that the fusing points of these alloys are much lower than the fusing point of any one of the components, the fusing points of the individual metals being as follows :—

Metal.	Melting Point.
Tin.....	235 deg. C.
Bismuth	270 " "
Cadmium	320 " "
Lead	330 " "

OBITUARY.

MR. C. FRANCE.—We have to announce the death on October 8, at his residence, Oliver Hill, Outwood-lane, Horsforth, near Leeds, in his sixty-ninth year, of Mr. Charles France, partner of the firm of Messrs. Milnes & France, of Bradford, architects, surveyors, and valuers. Mr. France was elected a Fellow of the Royal Institute of British Architects in 1898. In 1863 he entered into partnership with the late Mr. E. Milnes, of Bradford, who died on December 7, 1899, aged sixty-nine, and whose son, Mr. Charles C. Milnes, together with Mr. A. A. France, were admitted as members of the firm in 1888. Mr. Charles France prepared the plans and designs for an extensive enlargement of the electrical works and generating station in Whitehall-road, over an area of 5,700 square yards, for the Corporation of Leeds, for which the several accepted tenders amounted to an aggregate of 73,000*l*. Of the various architectural works carried out by the firm, we may mention the following in Bradford :—The Royal Victoria Nurses' Home, Beckett's Bank, and the Swan Arcade, all of which are illustrated in the *Builder* of February 19, 1898, No. XIII. of our series "The Architecture of our Large Provincial Towns"; many local improvements for the Corporation, several large business premises and warehouses, including those of Messrs. A. & S. Henry and the Bradford District Bank, warehouses in Peckover-street and in Water-lane, and the recent alterations and enlargement of the Royal Infirmary. The firm were architects of the engine-chimney at Liversedge, Yorkshire; the rebuilding of the Station Hotel at Keighley for the Midland Railway Company; buildings for the extension of the chemical works at Dewsbury and of the mills at Leaventhorp, near Bradford; a warehouse for Messrs. J. Benn & Co. at Oak Mills, Clayton, Yorkshire; the enlargement and alteration of Westfield, at Ilkley; and various residences at Harrogate, Horsforth, and other places in the county.

GENERAL BUILDING NEWS

CHURCH, WADSLEY, SHEFFIELD.—On the 9th inst. part of the scheme of church extension for Hillsbro' and Wadsley was completed. The new church, built on the site of the old iron structure, contains chancel 27 ft. 6 in. by 20 ft., nave 61 ft. by 26 ft., with small north transept, organ-chamber, and vestry. The entrance is by a porch on the south side. At the south-west corner is a bell-turret. The outer walls are of stone; Bath-stone has been employed for the interior generally. The east window has five lights, with tracery head. There is an open timber roof of pitch-pine, and the church is seated with pitch-pine benches and a few chairs. There is accommodation for 230. The heating is by hot water, and incandescent gas supplies the lighting. The architects have been Messrs. Ellis Bros., of Sheffield. The total cost of the scheme has been 3,200*l*.

ST. MICHAEL'S CHURCH, BATH.—This building has been reseated with English oak, the new benches affording accommodation for 500 worshippers. Each of the standards, at the ends of the various seats (seventy-six in all) is carved, all of varied design; whilst the backs and fronts of the benches have linen-panels carved upon them, surmounted by embattled moulds. The whole of the seating is untouched by polish, varnish, oil, wax, or sandpaper. All the work is pinned together by oak dowels, metal nails and screws being eschewed. The work has been carried out from the designs and under the superintendence of Messrs. Gill & Morris, architects, of Bath, by Messrs. Harry Hems & Sons, of Exeter. The cost of the new works has been about 1,000*l*.

CHURCH, WYCHE, WORCESTER.—The foundation-stone has just been laid of a church which is to be erected, as an off-shoot of the Malvern Priory Church, to meet the needs of the Wyche district. The church will consist of a nave 73 ft. long and 28 ft. wide, and a small apse separated from the nave by a chancel arch of 18 ft. span. The chief porch is at the south-west corner, while a second porch is near the north-east angle of the nave. Owing to the great eastward fall of the ground, the considerable space under the eastern portion of the building will be made use of for a vestry-room, heating apparatus, &c. The principal feature of the design is that the buttresses project into the interior of the church, and are arched over at a height of 12 ft. The side windows of the nave, with one exception, are plain lancets. The window at the west end will be a three-light lancet. The apse will have three lancet windows. Externally, the apse will be a marked feature, especially as seen from the road below. The whole seating accommodation will be 250, including the choir. The latter will occupy the eastern bay of the nave, the floor here being raised two steps above the general level of the church. The architects are Messrs. Nevinson & Newton, and the builder Mr. W. Porter, both of Malvern.

REPAIRS, &C., BONNETHILL U.F. CHURCH, DUNDEE.—This church has been repaired and repainted. Two three-light windows filled with leaded cathedral glass have been made in the north and south walls to give more light under the galleries. The heating system has been extended to the gallery. The suite of halls for church work have also been altered to provide anteroom and lavatory accommodation. The alterations and decoration have been under the direction and to the drawings of Mr. Leslie Ower, while the contractors were :—For mason work, John Nicoll; joiner, William Steele; plasterer, A. M'Ritchie; plumber, Andrew Findlay; heating, G. H. Nicoll & Co; glaziers, Donald & Smith; upholsterers, R. Buist & Sons; wireworker, J. A. Dickie; painter, W. Norwell.

CHURCH, EASTNEY, HANTS.—The foundation-stone of the new permanent church for the district of St. Margaret's, Eastney, was laid recently by the Bishop of Guildford. The new church will be built by Mr. Henry Jones, and the architect is Mr. J. T. Lee, of London. The first part of it will cost about 3,000*l*., and when this has been paid for the building will be completed, bringing the total cost up to about 7,000*l*. The chancel will be 35 ft. 6 in. long and 20 ft. wide, the height to the ridge being 42 ft. The bell turret will be at the north of the church, and vestry accommodation and an organ loft are provided. There will be a wide ambulatory round the chancel. The side chapel will be 28 ft. by 14 ft. The chancel arch is 28 ft. wide and 33 ft. high to the apex. There will be a double arcade of six arches in the nave. The chancel will be lighted on each side with twelve lancet windows, under arches recessed 5 ft. from the inner walls. The chancel will be terminated by a canopy 30 ft. high of

solid masonry, over the altar, on a base of seven steps above the nave, enclosing a domed subject of a "Majesty," with suitable ornamentation beneath. The nave and aisles will be 85 ft. long, 30 ft. wide, and 43 ft. 6 in. high. There are to be two entrances in Highland-road, and two porches at the western end of the church, where the baptistry will be. The arches of the nave arcade are carried above the three-light lancets. The clearstory and subsidiary arches are placed on a lower level in the same series, opening into the aisles. The main feature of the exterior will be the main end facing the Highland-road, which is a gablet in three divisions, about 64 ft. high to the apex, with panels for statuary, the whole enclosing at the end of the nave a two-light traceried window in the central division, and a single-light window on each side. The style of the church is an adaptation of Early English architecture to the requirements of a modern church. The materials to be used are brick with stone dressings, Fareham brick being used externally. The total seating accommodation will be for 800.—*Hampshire Telegraph.*

Primitive Methodist Church, Leeds.—A new Primitive Methodist Church, situated in Lady Pit-lane, Beeston Hill, Leeds, was opened on the 4th inst. The new chapel and school were built at a cost of 3,657*l.* Mr. W. G. Smithson was the architect of the new building, which is in the Classical style, adapted to the situation. The chapel has accommodation for 650 people, and the school will seat between 400 and 500.

Church Restoration, Llandegfan, Anglesey.—The ancient parish church of Llandegfan, situate midway between Beaumaris and Menai Bridge, was reopened after restoration on the 6th inst. The architect was Mr. P. Shearson Gregory, Bangor; the contract being carried out by Messrs. J. & R. Jones, builders.

Trinity United Free Church, Ayr.—This new church is situated at the angle of Midton-road and Carrick Park. Facing the angle is the end gable of the church, rising 60 ft. to the apex, and flanked with buttresses of considerable projection. Across the whole portion is a moulded arcading, in which are three groups of three light windows. Over this is a large five-light window, with a traceried head under a deeply-moulded arch. At the flanks of the gable are moulded panels with projecting gargoyles, and at the apex a niche over a carved corbal, and surmounted by a floriated cross. At the right of the gable is an octagonal turret containing the stair to the end gallery, and the entrance is by a projecting porch at the side of this turret and facing Midton-road. The turret rises to a height of 90 ft.; the lower portion carried up in plain masonry to the wall head line, and the upper stages treated with sunk panelling and moulded and gabled belfry openings. The turret terminates with a steep conical roof in red tiles, with a crocketted finial in copper and wrought iron. The entrance porch has a deeply-moulded archway, enriched with carving, and leading into a stone-lined porch, from which inner doors open into the church. The church is designed with a lofty nave and low side aisles, each bay of side aisles having pairs of single lights divided by broad buttresses. The clearstory walls are divided into bays by broad wall piers, and in each bay is a four-light window, with four-centered arched head, and filled with tracery of varied designs. The ridge line is carried unbroken for the full length of 100 yards, but at the chancel end the nave is narrowed, and the wall head raised and finished with a parapet, which is enriched with moulded and capped panelling. At this end is the Church Hall, with entrance and end gable facing Midton-road. The church is planned with nave, side aisles, and chancel. The seating is arranged with centre and side passages, and a small gallery at the end only. The nave is divided from the aisles by stone columns, over which a series of moulded arches carry the clearstory walls. From the main columns engaged shafts are carried up to the wall-head, and on the caps of those are carried the principal roof timbers. The roof is of hammer beam construction, divided into five bays by moulded main couples, which are filled at the angles with perforated tracery. The main timbers are all exposed, and the ceilings lined with wood stained a dark oak colour. The chancel forms a continuation of the church, and is divided by a moulded stone arch on clustered piers, with carved caps. The pulpit is placed at the side of the opening, and the choir, elders' seats, and Communion table within the chancel. The organ chambers are placed on each side with arched openings into both church and chancel, and in the end gable is a five-light window with traceried head. The church is arranged for the present seating of 566 persons, but a congregation of 700 could be accommodated. The accessory rooms include vestry, session-house, ladies'-room, kitchen, lavatories, &c. Ballochmyle red stone has been used for all the walling, internal arches, &c., green slates and red tiling for roofing, pitch pine for all internal woodwork of roofs, linings and seatings. The total cost, inclusive of site, will be almost 8,000*l.* The architect is Mr. John B. Wilson, Glasgow. The clerk of works is Mr. William Scott. The following were the contractors:—Mason and joiner, Mr. D. Kirkland, Ayr; plumber and slater, Messrs. W. Auld & Sons, Ayr; plasterer, Mr. Wm. Vass, Ayr; glaziers, Messrs. Meikle & Sons, Glasgow; painter, Mr. J. H. Fulton, Ayr; gates and railings, Mr. J. Crichton, Ayr; heating, Messrs. M'Kenzie & Moncur, Edinburgh; electric fittings, Messrs. Milne & Son, Edinburgh; wiring and fitting up, Messrs. Reid & Co., Ayr; sculptor, Mr. Vickers, Glasgow.

St. Edmund's Church, Northampton.—The celebration of the jubilee of the consecration of the church of St. Edmund, Northampton, commenced recently, when the church was reopened after renovation, and the new pulpit, choir stalls, stained glass window, &c., were dedicated by the Right Rev. the Lord Bishop of Leicester. The memorial window was executed by Mr. H. A. Hymers, of Chelsea. The main contractor for the general works was Mr. Henry Martin, of Northampton. The decorative works to the walls and roofs was executed by Messrs. Campbell, Smith, & Co., London. The electric installation has been carried out by Mr. W. C. Mansell, of Northampton; and the architect, as for the previous works to the church, was Mr. M. H. Holding, Northampton.

Parochial Buildings, All Saints' Church, Newcastle.—New buildings connected with All Saints' Church, Newcastle, were opened a few days ago. The new buildings comprise a mission-hall, clergy-house, gymnasium, &c. The cost of the scheme, including site, has been about 5,525*l.* Messrs. Hicks & Charlewood, of Newcastle, were the architects, and the contract was let to Mr. W. C. Tyrie for 3,261*l.* 9*s.* 10*d.* The mission-hall will seat over 200 persons. On the ground floor is a gymnasium, and the building also contains five club-rooms, two having partitions which may be taken down on occasions when extra accommodation is required. At the top of the building, which is of three stories, are rooms for the caretaker. The mission-hall is built of red brick, with red tiles, and faces Pilgrim-street, the rear of the premises being in the churchyard. Divided only by a passage from the mission-hall is the clergy-house, also of red brick.

Church, Dalton-in-Furness.—On the 11th inst. the foundation-stone of St. Margaret's Church, Dalton-in-Furness, was laid. The building will be of stone, and will accommodate 600 worshippers. The architect is Mr. R. B. Preston, of Manchester. The cost of the new church is estimated at about 4,000*l.*

Roman Catholic Church, Selly Oak.—The new Roman Catholic Church at Selly Oak, Birmingham, was opened on the 13th inst. It is dedicated to St. Edward, and is situate at the junction of Bournbrook and Elmdon roads. The new building (the architect of which is Mr. H. T. Sandy) provides seating accommodation for about 500, and when fully completed will consist of a nave, 82 ft. long and 30 ft. wide, two aisles equal in length to the nave, and an apsidal-ended chancel. At the east ends of the north and south aisles respectively will be the Lady and Sacred Heart chapels, and at the west end of the nave a vestibule, over which will be the choir and gallery. At the west end of the north aisle it is intended to build a tower, surmounted by a spire. The sides of the apse each contain a three-light traceried window, and the west gable is filled with a tracined window. The building (which has been erected by Mr. W. Bishop) is mainly of brick, with Bath stone dressings, and faced internally with plaster.

Asylum, Burley-in-Wharfedale.—That part of the new asylum which the West Riding County Council have built at Burley-in-Wharfedale was opened on the 9th inst. Having purchased the Scalebore Park Estate the Council launched a scheme embracing five blocks of buildings. The completed portion consists of three blocks, involving a total outlay of about 130,000*l.* The site of the institution is on the southern slope of the Wharfe Valley, within walking distance of Burley station. It is intended to add the remaining two blocks when occasion should arise, and in course of time to provide villa residences within the grounds for such patients as are prepared to pay for their upkeep. The accommodation at present available is for 210 patients. The whole of the work has been carried out under the supervision of the West Riding Surveyor (Mr. J. Vickers Edwards). The principal contractor has been Mr. Isaac Gould, of Leeds.

Municipal Buildings, Jarrow.—The foundation-stone of the new municipal buildings and County Court at Jarrow has just been laid. The new premises are to be erected at the corner of Grange-road and Wylam-street, and upon the site of the old Council Chamber and Corporation offices. In addition to the Council Chamber and the various public offices, the new block of property will provide accommodation for the holding of a County Court, the first to be established in the borough. The principal entrance to the municipal portion of the premises will be in Grange-road, and the County Court will be reached from a door in Wylam-street. A tower is to be erected over the Corporation entrance, and a smaller one over that of the County Court. On the ground floor, entering by Grange-road, offices will be provided for the Town Clerk, Borough Surveyor, Sanitary Inspectors, and Rate Collectors, and above these will be the Council Chamber, two committee-rooms, Mayor's parlour, and other apartments. In the Council Chamber there will be a public gallery with accommodation for fifty persons. From the side entrance in Wylam-street there will be offices for the County-court Registrar, and on the first floor there will be the County-court, together with solicitors', witnesses', and jury rooms. There will also be the judges' room. The caretaker's rooms will be on the second floor. The main staircase leading to the council chamber will be separated on both ground and first floors from the surrounding corridors by arcades, and will have a decorated ceiling and domed light. The fittings to the staircase, the council chamber, reception and committee rooms will be of dull polished oak wainscot. There will be electric light throughout the building, and ventilation in all the rooms will be secured by means of extract air ventilators driven by electricity. The premises are heated throughout with low pressure hot water pipes, but in each room a fireplace will be provided. The building has been arranged and designed by Mr. Fred Rennoldson, architect, South Shields, and the contract, amounting to 8,955*l.*, was placed in the hands of Mr. James C. Nichol, builder, South Shields.

Temporary Cells, Newgate.—In reference to these constructions, briefly referred to in our last issue, the Fireproof Partition Syndicate have sent us the following further details:—Accommodation has been provided in the female wing for fifteen prisoners, with officers' quarters and usual conveniences; and in the male wing for seventy prisoners, officers' quarters, conveniences, &c. The whole is lighted by electricity, and heated throughout by hot water. The male wing is a building of two stories, with outside walls of 3 in. to 4 in. thick, while the inside walls are 2 in. only. They are formed of dovetail corrugated sheeting. When this is used for fireproof partitions, a T iron is fixed across the ceiling; from this H iron standards are fixed at suitable distances, through which the sheets are brought to the floor level, where channel iron shoes keep them rigid and in position. In the wall, a wall-channel is placed to receive one end of the sheet, the other being held in position by the H iron standard; the next sheet is held by this and the next standard, and this process is continued until the last sheet is secured in the opposite wall-channel at the other end of the partition, which is then ready to receive a plastic material, which may be applied to both sides of the sheets at the same time. The partition, when finished, is from 2 in. in thickness, according as may be required, and is stated to be fireproof as well as sound, damp, and vermin proof. Should it be desired that wood skirting be fixed to one or both sides of the partition, it can be nailed direct to the partition, or wood fillets are placed in a few of the dovetail corrugations before plastering, and to these the skirting is fixed by screws or nails. For fireproof floors the ends of the corrugated sheets are fixed on the inside of the lower flange of the steel floor joists, and may be bent or arched to admit of air space between the concrete floor and the ceiling below, or placed straight from joist to joist. When a suspended ceiling is required, sheets are fixed into H iron bars secured to the floor joists by a patent clip suspender, and give a perfect key for plastering, which acts as a protection to the bottom flanges of the floor joists. Where an air space is not required the sheets are carried from joist to joist, forming a centering for concrete, and are plastered underneath to form the ceiling, which also acts as a protection to the lower flanges of the joists.

New Municipal Offices, Woolwich.—Mr. Brumwell Thomas has been appointed architect for the erection of a block of municipal buildings on the sites of about twenty houses in Wellington-street and Upper and Lower Market streets Woolwich. On Thursday last week the Borough Council accepted a tender of nearly 51,000*l.* from Messrs. Johnson & Sons, of Leicester, contractors. The Council rejected a proposal to add a town hall to the buildings, which, it was estimated, would cost some 9,000*l.* more.

Mission Hall, Sheffield.—On the 11th inst. the foundation stone of All Saints' Mission Hall, Sheffield, was laid. The upper floor will be in one room, 50 ft. long, and 32 ft. wide, in which 300 people may be seated for concerts, lectures, and other entertainments. This will be divisible, by means of moving partitions, into three rooms for Sunday school classes. The lower floor will have a room for a young men's club, and there will also be a kitchen and store rooms. The building will be of brick. Mr. Joseph Norton, of Norton Woodseats, is the architect, and Mr. George Carr, the contractor.

Restoration of St. Mary's, West Kensington.—St. Mary's Church, West Kensington, has recently been decorated and improved. The architect, from whose design and under whose superintendence the work has been executed, is Mr. G. Hamilton-Briggs, of Crowther-road, South Norwood, S.E.

Gladstone Memorial Hall, Hawarden.—Three years ago a design by Messrs. Douglas & Minshull, of Chester, was accepted for a building at Hawarden, in the Gothic style, capable of accommodating both books and students, as a memorial to the late Mr. Gladstone. This building, when complete, will consist of two wings connected by a central block. In one wing it was proposed to house the library. In the central part of the building were the rooms for the warden, and other

apartments; the remaining wing forms the hostel. The central portion and the library have now been built. The library consists of two rooms, each two stories in height, and surrounded by a gallery. The books are arranged in alcoves. The fittings are of oak.

INSTITUTE, BURSCOUGH, LANCASHIRE.—On the 1st inst. the opening of the new Stanley Institute at Burscough by Lord Derby took place. The building, which has been erected by Messrs. Irving & Sons, Southport, from designs prepared by Mr. H. E. Peach, Southport, is Elizabethan in style, situated on the Liverpool and Preston high road Within the building provision is made for large and small meetings, social gatherings, the usual necessaries of a club, and for the catering and entertaining of parties. Outside, a portion of the grounds is being laid out for a bowling green.

LIBRARY, DUNDEE.—A meeting of the Dundee District Libraries Committee, to which the subject of the erection of district libraries in the city with funds provided by Mr. Andrew Carnegie, LL.D., was remitted, was held on the 1st inst. Mr. W. Alexander submitted plans of the first of the libraries to be erected at Arthurstone-terrace, and estimated that the cost of erection would be 5,900*l.* The plans were approved of, and the architect was instructed to procure tenders for the work forthwith. The library will be erected at the corner of Arthurstone-terrace and Maitland-street, and close to Albert-street. The entrance is from the south, and on the one side of the hall is a ladies' reading-room, about 35 ft. by 20 ft., with isolated lavatories. On the other side is a lending library, 50 ft. by 30 ft, with librarian's room communicating, and a subsidiary stair giving access to the basement floor, where there is a large book store, 40 ft. by 30 ft. On the first floor are a gentlemen's reading-room, 56 ft. by 30 ft., and one for juveniles, 43 ft. by 18 ft., with librarians' room and lavatories.

PARISH HALL, LISCARD.—A new parish hall has just been erected in Manor-lane, Liscard. It is situated at the east end of the church, and consists of an assembly-room with a gallery at the east end, which together give sitting accommodation to 550 persons; two classrooms at the west end, each giving teaching accommodation for forty-two children; and a kitchen on the north side, which can also be used for a classroom. The two large classrooms are arranged in connexion with the platform to serve as retiring-rooms, or can be turned into one large room for lectures or small meetings. There are two principal entrances at the west end through a vestibule, having separate cloak-rooms, &c.; another from the south side from which the gallery is approached; and a fourth entrance through the kitchen. The whole building is to be lighted by electricity. The architect was Mr. Nobbs, and the contract for the whole of the builder's work was undertaken by Mr. T. F. Cooke, New Brighton, for 1,820*l.*

NAVAL TRAINING SCHOOL, ELMHAM, NORFOLK.—The building known as the County School, standing on the Bintry Hills, near Elmham, has been converted into an institution for the training of lads for the Navy. The accommodation is for 400 boys, and there is an isolation hospital for cases of sickness. The grounds are about 26 acres in extent. On the basement floor there are washing-rooms, baths for the boys, a bathroom for the staff, and heating apparatus fitted by Messrs. Barnard & Bishop, of Norwich. On the ground floor there is a central hall with corridors and classrooms adjoining. This hall is about 60 ft. by 35 ft., and is fitted with galleries. On the right there are four reception-rooms, and on the left is the schoolroom, about 75 ft. by 30 ft. The central hall and the schoolrooms can be converted into one large room by means of sliding doors. On the first floor in the south division there are washing-rooms, baths, dormitories, &c. On the second floor is a dining-hall, about 75 ft. long by 30 ft. wide, and along the galleries there are accommodation lockers for the boys. In the attics there are dormitories and other conveniences. On the summit of the building provision has been made for a water supply for flushing, &c. In connexion with this there is an iron outside stairway escape leading from the attics and from each floor by the windows down to the ground. The master's apartments are on the ground floor, and, like the rest of the building, are fitted with electric light and electric bells. On the first floor are a number of guest chambers for the use of visitors. The kitchen and service-rooms connected with the dining-room are situated on the north side. Messrs. Jarvis & Sons, London, have made the structural alterations, under the supervision of Mr. Hill, architect, of London. The cost of the alterations will be about 9,000*l.* or 10,000*l.*

ROYAL VETERINARY COLLEGE, DUBLIN.—The new Royal Veterinary College, Dublin, was opened on the 1st inst. The building is situate between the Shelbourne-road and the Pembroke-road, Ballsbridge. The main entrance is from the Shelbourne-road. Its erection was commenced in February, 1901. The buildings as they stand at present are arranged along the three sides of a quadrangle; and it is hoped that after some time has elapsed the quadrangle will be completed by the erection of a fourth block. The architect was Mr. L. A. M'Donnell, of Dublin, who was guided by the suggestions of Professor Mettam. The erection of the buildings was entrusted to Mr. James Beckett, and they were constructed under the supervision of Mr. R. Wilson, clerk of works, Professor Mettam superintending the details so far as they particularly concerned the requirements of a veterinary college. The sanitary work was entrusted to Mr. G. J. Crampton. The internal plumbing was done from the establishment of Alderman Dowd, who was also entrusted with the fitting of the water mains, fire hydrants, and fire extinguisher. Running around the college is a 3-in. main with hydrants at intervals. The buildings are fitted with electric light throughout. The electric light fittings were put up by Messrs. Egan & Tatlow, Dublin. The buildings are in the English Renaissance style. These are constructed of red brick, with cut stone dressings of Dumfries red sandstone. The cut stone carving at the entrance gate and throughout the buildings is the work of Mr. Charles Harrison.

WESLEYAN SUNDAY SCHOOL, ROTHERHAM.—New Wesleyan schoolrooms were opened at Eastwood, Rotherham, recently. The new premises are situate on a site adjoining the chapel, to which they are connected by a covered way. The scheme includes an assembly-hall, 65 ft. by 30 ft., with end gallery, infants' room, church parlour, classrooms, &c. The accommodation is for 650 scholars. The front is in rock-faced York stone, with ashlar dressings, the sides and rear being of brick. A feature is the front gable, which has a triple window, flanked by buttresses carried up and finished with octagonal pinnacles. Under the central window six round-headed windows have been placed to supply light to the classrooms and lobbies. The main entrances are right and left of the front, and have porches. Light cast-iron columns support the roof on the clearstory principle, and between these and the outer walls additional classrooms can be provided when required. Heating is by low-pressure hot water. Mr. John Willis, of Derby, was the architect; Mr. Richard Snell, of Rotherham, has had the building contract; and Messrs. Wright Bros, of Sheffield, have been the heating engineers.

CATTLE MARKET, BRAINTREE.—The new cattle market at Braintree has just been opened. The architect was Mr. Frank Whitmore, of Chelmsford, and the contractor was Mr. Ernest West, of Chelmsford.

WEST END CHURCH AND SCHOOLS, HAMMERSMITH.—These buildings were opened on the 2nd inst., after having been entirely redecorated and electric light and heating apparatus installed. The apse end of the church has been remodelled, and a new pulpit, marble baptistry, choir seats, and organ have been put in; also new lead-lights have been placed in main windows. The contract was let to Messrs. W. O. Collingwood & Co., Great Tower-street, E.C., the amount for the same being 1,158*l.* 15s. The work has been carried out from the designs and under the superintendence of Messrs. George Baines and R. Palmer Baines, architects.

CHURCH ENLARGEMENT SCHEME, MUNDESLEY, NORFOLK.—The scheme for the proposed enlargement of the picturesque old parish church at Mundesley is making progress. The architect (Mr. Lacey) has been taking levels and final measurements at the old church, and the actual work will shortly be commenced. "An extended scheme has been resolved upon," says the Parish Magazine. "At first it was thought best to retain the old roof, and merely add to it. This would have meant having a ceiling throughout the whole of the roof. It is now resolved to put an entirely new roof over the whole of the nave, and to roof and repair a small section of the old ruined chancel. Some interesting discoveries have been made. A considerable part of the tracery of one of the windows, in capital preservation, was dug up in the churchyard; also a stone, about 18 in. square and the same in height, carved at each side.

POOR LAW INSTITUTION, BLOOMSBURY.—A new receiving house for children and nurses' home for the parishes of St. Giles-in-the-Fields and St. George, Bloomsbury, was opened recently at Broad-street, Bloomsbury. On the ground floor of the receiving house is a dayroom for boys and girls, lavatories and cloakrooms, kitchen, scullery, and storerooms. On the first floor are dormitories for boys and girls, bathrooms, and officers' apartments. On the second floor are dormitories for boys and girls, bathrooms, isolation wards, and servants' bedrooms. The third floor, which is reached by means of an emergency staircase at either end of the building, comprises apartments for the nurses employed in the workhouse, including a bedroom and sitting-room for the superintendent nurse, six bedrooms and sitting-room for the nurses and assistant nurses, and a bathroom. Mr. Alfred Bush, of Ridgmount-street, was the builder, and Mr. J. Grafton Izard, Bloomsbury-square, the architect.

HOTEL, HAMMERSMITH.—The Swan Hotel, in the Hammersmith Broadway, has just been rebuilt. The building, which has been designed in the Elizabethan style, has five stories, the material used in the exterior being red bricks and Monk's Bath stone, Mr. Tomes, of Hammersmith, having carried out the stonework. Polished Norwegian pilasters are placed round the building at different points, the pilasters being relieved with Portland carved stone caps, and with polished brass bands round them. The private apartments of the hotel are on the top floors, and there is a means of exit to the roof. The first floor is taken up with the restaurant, kitchens, and cloakrooms for ladies and gentlemen. The dining-room is 30 ft. square. The electric light fittings in this room, as well as in other parts of the house, have been designed and executed by Messrs. Osler & Co., of Oxford-street. The dining-room is approached by a walnut staircase. The fittings of the interior of the building have been carried out in the Elizabethan style. From the King-street lobby entrance access can be obtained to the tea-room, which is shortly to be opened. This is about 57 ft. in length, decorated in the Japanese style. Mr. Charles G. Miller was the architect, under whose direction the work has been carried out by Mr. H. L. Holloway, of Deptford, Mr. Ackerman being general foreman. The lift and cellar hoists have been carried out by Messrs. Waygood & Co., the chimney-pieces by Messrs. Froy, the wrought-iron electric lamps outside the building have been provided by Messrs. Benham & Froud, and the polished granite by Messrs. Fenning & Co.

CEMETERY CHAPEL, WESTBURY-ON-TRYM.—A cemetery chapel is now in course of erection at Westbury, from the design of Messrs. La Trobe & Weston. It forms a part of the new cemetery scheme which the Barton Regis District Council is providing for Westbury parish. The walls are of pennant stone with Bath stone dressings, and the roof will be covered with Broseley tiles. The buildings comprise, in addition to the chapel, with its chancel, a vestry for the officiating minister, and a waiting-room for the public. The contractor for the work is Mr. Edwin Clark.

FOREIGN.

FRANCE.—It is announced that the Gustave Moreau Museum will be opened to the public on November 15. The exhibition, which is situated in the Rue de la Rochefoucault, will be administered by a committee nominated by the Government, and which includes among its members M. Pascal, M. Bonnat, and M. Dubois.——The inauguration of the monument to Jules Simon, on the Place de la Madeleine, will probably also take place in November.——The Government has commissioned from M. Poilpot, the painter, two new decorative panels for the Sorbonne. They are intended for the vestibules of the Galleries of Lettres and Sciences; one is a view of the St. Mark piazza, Venice; the other a view of the Place de la Concorde, with a perspective of the Rue Royale.——The Ponts et Chaussées Department of the Côtes du Nord has demanded the demolition of the very ancient oratory of St. Kirech near Perros-Guirec. The proposal has aroused much protest and opposition.——The President laid last Sunday, at Valence, the first stone of a bridge over the Rhone, to connect the Departments of Drôme and Ardèche.——M. Max Raphaël, architect, of Nîmes, has been commissioned to carry out the building of the new museum at Nîmes.——A ladies' college is to be built at Mans, at an estimated cost of 816,000 fr.——At Grenoble the Arsenal Ste. Marie is to be demolished, and its place taken by a new covered market.

INDIA.—The first section of the Kelani Valley railway was opened on the 15th ult.——New buildings for the Bengal United Service Club are to be erected in Calcutta, and the site has already been purchased.——The Rangoon waterworks, known as the Hlauga scheme, are to be completed during 1904. The reservoir, which is to hold 13,950 millions of gallons, is to be constructed at a distance of sixteen miles from Rangoon. The estimated cost of the whole is 39 lakhs of rupees. ——Water supply works, estimated to cost 11 lakhs of rupees, are to be executed in the Kolar goldfields district, Mysore.——The municipality of Allahabad are about to construct an electric tramway service. The route is the main thoroughfare of the city, from which branch off roads leading to all the principal offices and places of business. —— A scheme proposed by the Sanitary Engineer, to supply Myingyan, Burma, with water is likely to be adopted. It provides for the storage of 464 million gallons in a reservoir some six miles from the town.——The new quarters for the Naval Commander-in-Chief, to be erected in the Wellington lines, Bombay, is estimated to cost a lakh of rupees. ——A dry dock is now in course of construction at Colombo, Ceylon, and it is proposed to make a large wet dock also at the same place.——Expenditure has been sanctioned for the erection of accommodation of officers and subordinates at the dockyard, Kidderpore.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENT.—Messrs. Howgate & Keith, architects, of 10, Sackville-street, Piccadilly, have dissolved partnership. Mr. W. James Keith will continue his practice at the above address, and Mr. W. Church Howgate is opening new offices at Grosvenor Mansions, 82, Victoria-street, Westminster, S.W.

NEWCASTLE CORPORATION AND THE HOUSING QUESTION.—It is recommended by the Committee investigating the question of the housing of the poor in Newcastle that the Council approve of the erection on a site in each of the three suggested neighbourhoods, namely, the City-road, the Ouseburn,

and the Cattle Market, of a block of 100 single and pair room tenements, to accommodate about 400 persons, making a total in the three blocks of 300 tenements for 1,200 persons. It is suggested that the blocks should not exceed three stories in height, and that they should be built on the general lines of those at Dryden and Rachel streets, Liverpool, with such modifications and improvements as may be advisable to suit local circumstances; and it is purposed that the rents should be about 2s. per week for the single rooms and 4s. per week for the pair-room tenements. The Committee also ask the Council to authorise them to endeavour to obtain suitable sites in the neighbourhoods of the City-road, the Ouseburn, and the Cattle Market on which to erect the blocks of tenements, and to instruct the Property Surveyor to prepare plans and estimates, a further report on which will, in due course, be presented to the Council.—*Newcastle Journal.*

OPEN SPACES.—Miss Octavia Hill makes an appeal, which is supported by the National Trust, for the acquisition, at a cost of 400*l.*, of an area of nine acres on the summit of the Kymin, near Monmouth, whence may be obtained a fine view of the Wye district and of, it is said, ten neighbouring counties. On the Kymin, which rises to an altitude of 800 ft. above the sea-level, and until lately belonged to the Monmouthshire estates of the Duke of Beaufort, was erected in 1801 a monument in honour of the British Navy and its commanders, and dedicated to Elizabeth Duchess of Beaufort, a daughter of Admiral Boscawen.——The Board of Agriculture have held a local inquiry in the matter of an application preferred by Lord Onslow, lord of the manor, for a provisional order in terms of the Commons Act of 1876, for the regulation of Merrow Downs, a space of 260 acres of open common land near Guildford. A provisional scheme has been formulated whereby the control of the downs would be given to a body of nine conservators, whilst the costs of the order and of improving the downs would be met by the sale of three acres of land. It appears that Lord Onslow desires that the digging of flints shall be discontinued, and that the Rural District Council are dissatisfied with that proposal.——It is stated that Mr. James Joicey, member of a firm of colliery proprietors, has offered to give sixteen acres in the Annfield Plain mining district of Lanchester, North Durham, provided that voluntary subscriptions for the laying-out of the park are forthcoming.——The Stepney Borough Council have agreed to take over and to maintain the graveyard of St. Mary's Church, Whitechapel, which the Metropolitan Public Gardens Association had agreed to put in order. The Association have agreed to make offers in respect of the acquisition of three squares in Lambeth and a site at Putney, and to support Lord Balcarres's Land Dedication Bill for assisting landowners to set aside lands for the enjoyment of the public without necessarily a surrender of their interests in the freehold.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.—The opening meeting of the session was held on Friday evening, 10th inst., when the Presidential address was delivered by Mr. C. Ernest Monro. At the outset, reference was made to the progress and work of the Society since its institution, and thereafter Mr. Monro proceeded to read a paper entitled "Materials—Some Misuses and Limitations." The "lamp of truth" was strongly emphasised, and the importance of practical knowledge of the nature and capabilities of material with regard to their individual uses and adaptabilities for express purposes and treatment in construction. Attention was subsequently called to the conditions of the prize offered by Mr. P. Macgregor Chalmers for the best essay on the subject of "New Buildings in Glasgow, and their Methods of Construction."

THE CHURCH CRAFTS LEAGUE.—During the Church Congress a meeting of the league was held at St. Crispin's Hall, Northampton, when a good audience assembled to hear explained the objects and methods of this Society. The chair was taken by the Bishop of Rochester, who referred briefly to the circumstances which had led to the formation of the Society, which had for its object the bringing together of the two great human professions—the clergy and the artists. The Rev. Percy Dearmer then spoke of the difficulties which beset any clergyman who wished to build or furnish a church that should be likely to satisfy the advanced tastes of future generations. If he turned to the ordinary trade catalogue, and procured ready-made fittings turned out by machinery, he filled his church with objects that might, perhaps, violate the fundamental principles of that branch of art which they caricatured. In the Church Crafts League they had a society which was supported entirely by the contributions of those who believed in its objects, and which existed in order to bring clergy into touch with artists and craftsmen who were willing to employ their talents in our churches. Mr. Stirling Lee, the next speaker, explained the point of view of the artist. He said that it was not difficult to understand why the clergy and the artists had drifted so far apart, when one considered that any artist going into a church was bound to face the fact that in every part of the building in which he might reasonably have expected to be allowed to offer of his best gifts to the Giver, he had been passed over in favour of the commercial firms. The members of the musical profession would naturally think but little of a type of worship which, when it might avail itself of their services, passed them over in favour of a mechanical barrel-organ, which always played certain conventional tunes in which all the fundamental laws of harmony were ignored. There were many gifted men who were willing to work in our churches, and the Church Crafts League had been established in order to bring these artists into touch with the clergy. During the Congress the League held a small exhibition (consisting chiefly of photographs and designs) at the Central Arcade. The exhibitors included Mr. Henry Holiday, Mr. Anning Bell, Mr. Alexander Fisher, Mr. W. S. Frith, and many other well-known artists.

BRITISH SCHOOL AT ATHENS.—The annual meeting of subscribers to the British School at Athens was held this week in the rooms of the Society of Antiquaries, and the chair was taken by Dr. Thomas Hodgkin. The report was read by the hon. secretary (Mr. William Loring), and stated that the work of the School had been carried on successfully under the directorship of Mr. Bosanquet during the past session. The first student to arrive in Athens was Miss Lorimer, Classical tutor at Somerville College, Oxford, early in October. After some weeks spent in country travel, she devoted herself in Athens to a study of the red-figured vases of the latter half of the fifth century in the Central Museum. Another lady student, the Baroness E. Rosenörn-Lehn (University College, London), in the course of a long season at the School (from the beginning of November to the end of June) applied herself mainly to numismatic studies; making a special investigation of the representations of birds in ancient art, especially on coins. The men students were Mr. M. N. Tod, scholar of St. John's College, Oxford ("Senior Student"), Mr. F. W. Hasluck, scholar of King's College, Cambridge ("School Student"), Mr. C. Heaton Comyn ("Architectural Student"), Mr. A. P. Oppé (late Exhibitioner of New College, Oxford), and Mr. A. E. Henderson (architect). The committee were happy to report that the design sketched out last year by Sir R. Jebb for the endowment of a studentship for research had been realised by the appointment of Mr. M. N. Tod, the "Senior Student," for two years. Mr. Tod's special line of study being epigraphy, he spent much time in the Epigraphic Museum at Athens, under the general direction of Dr. Wilhelm, collating, and, where necessary, preparing for publication a number of difficult fourth century inscriptions, which was shortly to appear in the *Journal of Hellenic Studies.* Mr. Hasluck arrived, with Mr. Bosanquet, at the beginning of November, and devoted the winter (1) to attendance at archæological lectures and the acquisition of the modern language; (2) to a comprehensive study, in Athens, of the history and antiquities of Cyzicus, in Asia Minor, with a view to an excavation which was to have been undertaken in the spring. The excavation, unfortunately, was necessarily abandoned, through no fault of Mr. Hasluck, who, however, was able to collect some thirty-five unpublished inscriptions and two pieces of archaic sculpture, one of which (a sixth-century relief of Herakles) was considered of sufficient value to be removed to the Imperial Museum at Constantinople. Mr. Comyn was appointed to an "architectural studentship" in connexion with the excavations in Crete. He occupied himself in the neighbourhood of Athens by making a complete set of drawings of the beautiful little Byzantine Church at Daou, at the south end of Mount Pentelicus, to which Mr. Bosanquet had invited his attention. Mr. Oppé had worked steadily in the library of the school at the obscure subject of Greek Oracles. Mr. Henderson was readmitted as a student for the third time, for the special purpose of the Cyzicus survey. Of the preceding year's students, Mr. J. H. Marshall had been appointed Director-General of the Archæological Survey of India; Mr. Hopkinson had become a Lecturer in Greek at the University of Birmingham; and Mr. Frost a lecturer in the Training College at Isleworth. Mr. Wells had settled down to the practice of his profession as an architect, and Mr. Penoyre had undertaken a course of Archæological "Extension" lectures. Messrs. Fyfe and Mackenzie, formerly students of the school, had served once more as Mr. Evans's assistants at Knossos. Mr. Edgar, formerly a student of the school, and now on the staff of the Museum, Ghizeh, spent some time in Athens, working both on the catalogue of that Museum and on the report of the excavations at Phylakopi. Passing to the work of the Director, the committee had to record the preliminary excavation of the early site at Palaeókastro, on the eastern coast of Crete. The excavation was carried out under the supervision of the Director, with the assistance of the "Architectural Student" appointed for the purpose. The site appeared to have been almost untouched from Mycenaean times until the middle of the last century, and contained abundant remains of houses, large and small, of the Mycenaean period, together with numerous tombs and many hundred vases, both of that and of the earlier ("Kamáraes") epoch. The Director had been busy sorting and preparing for publication the last results of the important excavations at Phylakopi, in Melos. The finest specimens of pottery from Phylakopi now adorned the Mycenae room in the Central Museum at Athens; and a number of duplicates had been brought home to England, by the courteous permission of the Greek Government, and would be divided between the Ashmolean, Fitzwilliam, and (probably) the British Museums.—The Chairman congratulated the meeting on the success of the School. In past times the zeal of archæologists had been somewhat intermittent. Now it was to be hoped that it would be continuous, and that we should not fall behind other nations; and that no Chancellor of the Exchequer would ever lay his hands on the little grant which had been made by the Government. He moved the adoption of the report, and the motion was seconded by Professor Lewis Campbell. Mr. Bosanquet, the Director, then gave a short account of last year's work.

INTERNATIONAL FIRE EXHIBITION, EARL'S COURT, 1903.—At the Executive meeting of the British Fire Prevention Committee, held on Wednesday afternoon, the announcement was made that the Committee's preliminary arrangements for the International Fire Exhibition had been completed, and the general programme finally decided upon. The exhibition will include many interesting exhibits in the way of modern constructional and engineering work, and the latest fire appliances, as also in the form of paintings, engravings, and historical relics.

APPOINTMENT OF SANITARY OFFICERS.—The Local Government Board has sanctioned the appointment of the following sanitary officers:—Mr. H. W. Roberts, Medical Officer of Greenwich; Mr. J. Grimsley, Sanitary Inspector in Hampstead; Mr. T. L Birrell, Sanitary Inspector in Islington; Messrs. Goodfellow, King, and Fisher, Sanitary Inspectors in Southwark.

THE ARTS AND CRAFTS EXHIBITION SOCIETY.—The Arts and Crafts Exhibition Society have been awarded special honours at the Turin International Exhibition of Decorative Art. By unanimous vote of the International Jury a special diploma of honour was given to the Society. Their next exhibition of decorative design and handicraft in London will be held at the New Gallery, and will open in the middle of January. Owing to the limits of space the works shown will be those of artists and craftsmen of the United Kingdom. The receiving days will be the last three days in December.

HOUSING OF THE WORKING CLASSES.—On July 29 last the Parliamentary Committee of the London County Council submitted to the Council a report by the Clerk of the Council dealing in detail with the proceedings of the Joint Committee of Parliament appointed to consider the question of the revision of Parliamentary Standing Orders in reference to rehousing persons of the working class displaced by the operations of companies and others in pursuance of statutory powers. The Joint Committee have issued their Report, submitting draft standing orders and model clauses which they recommend in place of the present standing orders 39 and 111 (House of Lords) and 31 and 183A (House of Commons), and the model clauses usually inserted in private and local Bills and Provisional Order Confirmation Bills. The principal points in the recommendations involving alterations in the present practice with regard to rehousing persons of the working classes displaced under or in connexion with statutory powers are summarised as follows by the Parliamentary Committee of the County Council, in so far as they affect London:—(*a*) That the present limit of nineteen houses or tenements allowed to be demolished in any one metropolitan borough without any obligation to rehouse be abolished, and that where any such dwellings are proposed to be acquired, it be left to the Home Secretary to determine after inquiry as to the number of persons to be rehoused, such number not to exceed the number of persons displaced. (*b*) That it be left wholly to the discretion of the Home Secretary to determine as to the area within which new dwellings should be provided under a rehousing scheme. (*c*) That in all cases where persons of the working classes are to be displaced under statutory powers, promoters of schemes be required on or before December 17 to deposit in Parliament and with the Home Secretary and the Local Authority concerned a statement in writing giving particulars of such displacements. (*d*) That within one month of acquiring lands upon which persons of the working class are residing or have been residing within the last preceding five years, the company or body acquiring such lands shall send to the Home Secretary, the London County Council, and each Local Authority concerned, a memorandum and plan describing the lands and houses, and giving, as far as possible, particulars of the present occupiers and the occupiers during the last preceding five years. (*e*) That the Home Secretary be required to keep a register containing particulars of the persons with regard to whom he may decide a rehousing obligation has arisen, and shall, if he decides that insufficient rehousing accommodation has been provided, require the company to submit and carry out a scheme for providing new dwellings. (*f*) That in determining as to the manner in which the company has fulfilled, or shall be required to fulfil, rehousing obligations, the Home Secretary may take into account the question whether the number of persons entered in the register as occupying any houses described therein is greater than the number

permitted by law in the district in which the houses are situate; and also any financial assistance given by the company to any schemes of the London County Council or a Local Authority for the provision of working-class dwellings. (*g*) That the Home Secretary be empowered to fix the rents to be charged for new dwellings, and to attach to his approval of any scheme any conditions not being in excess of the conditions imposed by the London Building Act, 1894, or any other Act or by-law relating to buildings in London. (*h*) That all buildings erected or provided under a rehousing scheme be subject to the provisions of the London Building Act, 1894, or any other Act relating to buildings in London. (*i*) That with a view to obviating the necessity for inserting model clauses in all Bills to authorise the displacement of persons of the working class such clauses be embodied in a public general Act of Parliament.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

12,208.—A Combined Flushing and Disinfecting Apparatus: *L. Donlé.*—Through the closed top of the chamber that holds the disinfectant, and is fastened on to the side of the tank, is inserted an air tube, of which the valve is joined to the ordinary pull chain. At the base of the chamber is an open cock. A small quantity of the disinfectant is delivered, and the valve is opened for the admission of air, at each discharge of the cistern for flushing purposes. In another adaptation a rocking-lever, attached to the cock and worked by the pull chain, is substituted for the valve in the air tube.

12,243.—An Improved Winch for Transporting Machinery: *H. A. L. Barry.*—The inventor seeks to prevent freedom of rotation during a change from the one clutch to the other and to enable the drums to be driven at relatively different speeds; of the two drums, running loosely on the shaft, one is forced against the other with a spring which maintains their clutch surfaces normally in contact, whilst a neck checks axial motion of the other; the former drum is kept always in engagement with either a disc or the latter drum by means of the engagement that is set up between a friction disc upon the shaft and the clutch surface of the former drum when the shaft is moved towards the left hand by levers and a link. A spur wheel maintains the latter drum constantly engaged with a pinion upon the engine shaft. (Confer also Nos. 20,606 of 1899 and 15,416 of 1900.)

12,272.—Moulding of Artificial Stone Slabs, Tiles, &c., for Paving and other uses: *F. Krupp Grusonwerk.*—On the piston of the hydraulic cylinder is mounted a die or stamp that will slide in a moulding-box supported by a lever; the upper die is mounted upon a slide which has a large receptacle or opening for a charge of body material, and a smaller opening, and is worked (together with the lever and the pressure and exhaust valves of the press) by cam grooves and surfaces of a drum. With the delivery of body material to the mould, the lesser receptacle takes a charge of facing material from a separate hopper, which is then spread over the body material in the mould as the slide makes a return stroke. After the die on the piston has fallen to its lowest position, then the upper die rises above the mould, and is raised with a lever into close contact with the die; the ascending piston presses the material into shape, with a slight opening of the exhaust valve the slide is moved towards the right hand, and the fashioned article is extruded upwards out of the mould for its discharge by the next advance of the slide. The movements of the stamp or die, the slide, and other parts of the machine can be altered for differently sized slabs or blocks, since the surfaces and cam-ways may be easily taken off the drum.

12,277.—A Pivot Adjustment for Fanlights, Windows, Screens, and other Swinging Appliances: *E. Townshend.*—A curved disc upon the squared portion of the pivot that runs against rollers upon a plate screwed on to the frame, sets up the friction required. A washer is inserted between the disc and a plate put into a dovetailed recess, carried by a frame. A hole in the plate of the frame takes the round neck of a pin, to which the other plate is joined. For the curved disc may be employed a lenticular disc, consisting of discs curved in opposed directions.

12,283.—A Mounting for Frame-Saws: *W H. Reynolds and P. Brauer.*—Two frame-saws, reciprocated with cranks and connecting-rods, are caused to work horizontally as they slide in guides upon the opposite sides of two pillars. Each of the saws is to be tightened with a strut and tension-rod, and is joined to cross-heads from which are projections that work in guides, carried by slides which one lifts or lowers with screws that are turned at one and the same time by means of level gearing. A belt from the main crank shaft works the level gearing, which a crown train will either reverse or throw out of action.

12,296.—Fittings, &c., for Baths: *H. H. Hodkin.*—The bath having castors, whereby it can be turned outwards into the room, is arranged underneath the sink and turns about the outlet of the sink, in the end of which is placed a boiler heated with a gas-burner. It is further contrived that the turning outwards of the bath shall close the discharge-valve, which otherwise will remain closed.

12,301.—Water-supply (Domestic): *I. G. Waterman.*—The supply is regulated with an electrical apparatus that may be duplicated for hot and cold water, the armatures of two electro-magnets having a common core are secured to a rod, upon the end of which is a slide-valve that regulates communication between the service and basin-supply pipes, a weight counterbalances the armatures and rod, the coils are set in parallel whereby the valve will be closed when the lower coil is energised, and opened when the upper coil is energised. A float within a small tank connected to the basin will automatically shut the supply at a certain level, and is secured to a pivoted arm which will effect a shutting-off of the supply, by closing a circuit that includes the lower coil as soon as the float has attained the level mentioned.

12,357.—Bricks for Buildings, Garden Walls, &c.: *F. W. Webb.*—In order that they may carry off moisture or rain-water, the bricks are fashioned with their upper and lower bearing or bedding surfaces inclined outwards. For laying the corners of buildings the bedding surfaces are made with a downward slope to the two outside faces.

12,383.—Moulding of Bricks, &c.: *E. R. Sutcliffe.*—As the material is fed into the moulds by a hopper, in which rotates a feeding shaft having blades and prongs, it is pressed by plungers worked by eccentrics and a crank upon the main shaft. The plungers are mounted upon a cross-head, to which the eccentrics are joined with rods; a cam and a rocking lever move the mould-box in its horizontal guides, and the plungers eject the moulded goods on to an endless band carrier. For perforated bricks or blocks the cores are screwed into one plunger, which has a perforated cover-plate that obviates their working loosely, and so pass into the openings of a plate fastened upon the other plunger, and surplus material punched out by the cores escapes through recesses in the plunger into the hopper. The tapering of the cores and moulds in opposed directions facilitates the separation of the cores from the bricks.

12,498.—Machines for Sweeping and Scraping Roads: *F. J. Scott.*—The scavengering machine comprises scrapers upon a frame mounted upon two driving-wheels worked with pedals, the stems of the forks that carry the two back steering-wheels are pivoted in sockets, and arms, a rod, and a toothed rod join them to a pinion upon the steering-handle. Arms clamped to fixed quadrants adjust the scrapers and turn the refuse into the main scraper for discharge to either side; in another form the refuse is turned by the adjustable scrapers to a rotatory scraper or brush, or a combined brush and scraper, within a casing that opens into a container underneath an elevator which lifts it into a cart. On the brush hub of the axle of the side wheels is a toothed wheel, geared to a drum having teeth around its interior and a pin, forced with a spring, which normally engages with a hole in a disc at the side. A hand-wheel on a shaft lifts and lowers the brush. When the brush is lifted its turning is arrested with a lug upon the pin that engages with a stationary cam and is pulled away from the disc.

12,582.—Improvements in Levels: *J. V. Janin and N. T. Folliffe.*—The middle part of an iron frame forms a recess, or cell, in which are embedded two glass plates, between which is poised a weighted needle. A screw and nut that engage with a yoke upon the scale ring, provide for a fine adjustment of the latter, or a screw in engagement with a nut upon the scale will serve for that purpose. The cell may be rendered liquid-tight, and be filled with oil, and an inner flange of the cylinder that constitutes the cell, may be graduated with the scale.

12,589—Electrical Insulators, Electrodes, &c, of "Glass Stone": *L. A. Garchey.*—New instead of old glass is employed in the making of "glass stone" (for which see Nos. 5,772 of 1896, 2,003 of 1898, and 5,885 of 1900), with the addition, it may be, of argillaceous or calcareous sands. The moulds are deposited upon the rotatory hearth of a devitrifying furnace or kiln. A hydraulic press gives the article the exact shape desired. The inventor claims for the material that it will take an electrolytical deposit of copper or other metal, and that the process is available for the making of electrical insulators, condensers, electrodes, and similar goods.

12,623.—Posts for Fencing: *L. H. Barry.*—The hollow posts, made of burned clay or some such durable material, are pierced for the fastenings of the wires, some of the holes being disposed in a horizontal line for the fastenings of the vertical laths on to which the fencing is secured; the invention is available for wooden railed fencing.

12,636.—Contrivances for Travelling-Cranes: *Wellman Seaver Engineering Co.*—For travelling-cranes that are mounted side by side upon parallel rails, the inventor causes the trolley which carries portion of one crane to be lengthened, and to under-lap the path of the two cranes in common, and also a portion of the trolley which carries a part of the other crane, the former crane being sustained below its path and the latter crane above its path.

12,713.—A Regulator Valve for Flushing-Apparatus: *H. Wehner.*—A double-piston valve is caused to slide within a cylinder in such a manner that its upper face, in a normal state of rest, closes the inlet, since the water in the inner chamber derived from the main supply through a port presses against the under surface of the valve; at the bottom of the port or passage is a cock the turning of which opens a passage at the bottom of the chamber, and so relieves the pressure, whereupon the valve falls, and a flush ensues; the turning again of the cock causes a return of water into the inner chamber and the consequent pressure shuts the valve again.

12,724.—Preparation of Plaster of Paris: *J. Hindshaw.*—In order to make the plaster porous the inventor adds whiting, with alum or sulphuric acid in the water used for mixing it; the plaster will be lighter and form a better non-conductor of sound and heat, by reason of the presence of bubbles or cells of carbonic acid gas in the moulded plaster.

12,745.—Siphonical Discharge: *T. W. Woodhouse.*—A dish mounted upon legs is placed around the stand-pipe; the bottom of the bell, from which a flange projects inwards, is extended in order that it may fit over the dish; on the edge of the dish are projections that engage with pockets fashioned upon the bell as guides. For starting a flush the bell is lifted and then allowed to fall through the force of gravity; otherwise it may be drawn down from its normal upper position of rest.

12,749.—Laying of Parquetry for Flooring: *O. Gutzwiller.*—Metallic tongues are employed for holding the parquetry strips together; the tongues have cross-slots through which the nails for fastening the strips are driven.

MEETINGS.

Friday, October 17.

Architectural Association.—Mr. T. R. Spence on "Homer and Architecture." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. J. Priestley, B.A., on "Duties of a Sanitary Inspector." III. 7 p.m.

Institution of Mechanical Engineers.—Captain C. C. Longridge on "Oil Motor Cars of 1902." 8 p.m.

Saturday, October 18.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection of Disinfecting Apparatus and Model Steam Laundry, St. John's Wharf, Fulham. 2.0 p.m.

Incorporated Association of Municipal and County Engineers.—Eastern District meeting at King's Lynn.

Monday, October 20.

Liverpool Architectural Society (Incorporated).—First members' meeting, to be held at the Free Public Library, William Brown-street. A selection of the chief architectural books, including various new works, will be on view. 6 p.m.

Tuesday, October 21.

Royal Victoria Hall, Waterloo-road, S.E.—Rev. P. M. Higginson on "Palmyra and Baalbec." 8.30 p.m.

The Institution of Junior Engineers.—Visit to the London Bridge Widening Works. 2 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. H. R. Kenwood on "Methods of Disinfection." 7 p.m. (Inspection at Soap Works, Silvertown, 3 p.m.)

Architectural Association of Ireland.—Mr. Arnold Mitchell on "Some Interests of Mediæval Architecture," in the Grosvenor Hotel, Dublin. 8 p.m.

Friday, October 24.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. W. Harris on "Water: Composition, Pollution, and Purification." 7 p.m.

Saturday, October 25.

The Craft School, Globe-road, E.—Mr. H. H. Cunynghame, C.B., on "The Art of Enamelling," with practical experiments. 8.30 p.m.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at Southwark and Vauxhall Waterworks, Hampton.—2.30 p.m.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 3.—By Orchard, Joyce, & Marson (at Coventry).

Canley, &c., Warwick.—A freehold estate, comprising 163 a. 3 r. 35 p.	£5,000

October 6.—By L. Farmer & Sons.

Camberwell.—115, Paulet-rd., u.t. 65 yrs., g.r. 6*l.*, w.r. 59*l.* 16s.	410
Kilburn.—6, Brondesbury Villas, u.t. 55¼ yrs., g.r. 9*l.*, e.r. 60*l.*	585

By Percival Hodson.

Barnet, Herts.—1 to 4, Lonsdale Cottages, f., w.r. 91*l.*	1,370
Southgate.—2 to 5, Chase-rd., f., w.r. 61*l.* 2s.	775
Willesden.—15, Shakespeare-av., u.t. 81 yrs., g.r. 5*l.*, e.r. 30*l.*	265
Kentish Town.—14, Alma-st., u.t. 21¾ yrs., g.r. 5*l.*, y.r. 28*l.*	255
Crouch End.—68 and 70, Barrington-rd., u.t. 93 yrs., g.r., 13*l.*, y.r. 82*l.*	815

By Jenkins & Sons.

City of London.—7 and 8, Laurence Pountney-la. (offices), f., e.r. 250*l.*	7,010

October 7.—By C. W. Davies & Sons.

Highbury.—29, 32, and 34, Stavordale-rd., u.t. 74 yrs., g.r. 24*l.*, y.r. 132*l.*	1,385
Barnsbury.—5, Richmond-rd., with workshops in rear, u.t. 39 yrs., g.r. 8*l.*, e.r. 55*l.*	400
Holloway.—25 and 29, Eden-gr., u.t. 26 yrs., g.r. 4*l.*, y.r. 95*l.*	565
2, Grove-st., f., w.r. 31*l.* 15s.	280

By Daniel Watney & Sons.

Southall, Middx.—1 to 6, Hambrough-villas, f., w.r. 172*l.*	3,790

By Woods & Snelling.

Sidcup, Kent.—Station-rd., West View, f., p.	65
Station-rd., Shirley, f., y.r. 45*l.*	64

By Wriford & Dixons.
Teddington.—Park-rd., Norfolk Lodge and 1¼ a., f., y.r. 80*l.* £1,350
Holloway.—9 and 11, Dalmeny-av., u.t. 17 yrs., g.r. 21*l.*, y.r. 140*l.* 660
By Leedam & Harrison (at Burton-on-Trent).
Scropton, Derby.—Scropton Farm, 114 a. 0 r. 29 p., f., y.r. 280*l.* 7,100
Hanbury, &c., Staffs.—Shirley Lodge Farm, 169 a. 3 r. 33 p., f., y.r. 260*l.* 3,400
October 7.—By G. Loveitt & Sons (at Coventry).
Coventry, Warwick.—Warwick-rd., Fernielee, u.t. 76 yrs., g.r. 13*l.* 5s. 6d., p. 1,500
12, Warwick-rd., f., y.r. 38*l.* 740
14, 16, 18, and 20, Cope-st., f., y.r. 80*l.* 1,315
By Fleuret, Sons, & Adams (at Masons' Hall Tavern).
Erith, Kent.—Crayford-rd., The Prince of Wales, freehold rental of 150*l.*, reversion in 39 yrs. ... 4,500
Avenue-rd., f.g.r. 6*l.*, reversion in 57 yrs. 150
Kennington.—363, Kennington-rd., with off-licence, f., y.r. 52*l.* 2,250
363a, Kennington-rd. (S), f., e.r. 145*l.* 12s. 1,300
arylebone.—Devonshire-st., The Marquis of Anglesea, p.-h., u.t. 12½ yrs., g.r. 21*l.* y.r. 100*l.* 480
By William Rolfe (at Mason's Hall Tavern).
City of London.—Fenchurch-st., The Elephant, p.h., u.t. 44 yrs., g.r. 110*l.* with goodwill 13,900
October 8.—By H. Donaldson & Son.
Clapton.—137, Powerscroft-rd., u t. 73 yrs., g.r. 5*l.*, e.r. 32*l.* 300
Dalston.—52 and 54, Mayfield-rd., u.t. 52 yrs., g.r. 10*l.*, y.r. 64*l.* 685
Wood Green.—4, Terrick-rd., f., e.r. 30*l.* 385
By Fortescue & Co.
Putney.—St. John's-rd., Therfield, u.t. 62 yrs., g.r., &c., 18*l.* 14s., y.r. 110*l.* 1,325
Wandsworth.—131 and 133, Chatham-rd., f., w.r. 46*l.* 16s. 430
Wimbledon.—82, Gladstone-rd., u.t. 73½ yrs., g.r. 3*l.* 10s., w.r. 31*l.* 4s. 260
Clapham.—48, Victoria-rd., u.t. 78 yrs., g.r. 8*l.*, e.r. 55*l.* 450
By Herring, Son, & Daw.
Kennington.—160 and 162, Upper Kennington-lane; also the Vauxhall Baptist Chapel, C, area 11,840 ft., y.r. 109*l.* 10s. 2,000
By Frank Jolly & Co.
Hackney.—1, Darnley-rd., f., e.r. 65*l.* 1,000
Victoria Park.—4 and 5, Comboss-rd., u.t. 57 yrs., g.r. 8*l.* 8s., w.r. 54*l.* 12s. 320
By J. H. Mellenfield.
Shoreditch.—Curtain-rd., f.g.r. 160*l.*, reversion in 76 yrs. 4,200
By F. Miller & Reid.
Holloway.—66, 68, and 70, Queensland-rd., u.t. 50 yrs., g.r. 12*l.* 12s., w.r. 93*l.* 12s. 450
By Wootton & Green.
Hackney-rd.—108 to 110, Goldsmith's-row (S), u.t. 20½ yrs., g.r. 8*l.*, y.r. 80*l.* 500
6 to 10, Oakford-pl., u.t. 20½ yrs., g.r. 2*l.*, w.r. 163*l.* 16s. 620
By Wyatt & Son (at Chichester).
Chichester.—42, Adelaide-rd., f., y.r. 12*l.* 10s. 185
By G. A. Wilkinson & Son (at Newport Pagnell).
Newport Pagnell, Bucks.—Caldecote Farm (part of), 86 a. 2 r. 23 p., f., y.r. 115*l.* 10s. 2,360
By Balch & Balch (at Camden Town).
Kentish Town.—13 and 15, Gaisford-st., u.t. 46 yrs., g.r. 16*l.*, y.r. 100*l.* 955
93 and 95, Patshull-rd., u.t. 59 yrs., peppercorn g.r., y.r. 80*l.* 1,155
Holloway.—18, Tremlett-gr., u.t. 71¼ yrs., g.r. 7*l.* 7s., y.r. 40*l.* 470
78 and 79, Huddleston-rd., u.t. 65 yrs., g.r. 14*l.*, y.r. 98*l.* 1,085
Hampstead.—55, Ainger-rd., u.t. 59 yrs., g.r. 8*l.*, y.r. 55*l.* 520
By Bellamy & Co. (at Putney).
Fulham.—64, Chesilton-rd., u.t. 78 yrs., g.r. 8*l.*, e.r. 42*l.* 390
23, Cedar-rd., u.t. 48 yrs., g.r. 7*l.* 10s., y.r. 41*l.* 12s. 260
23, 25, 63, and 65, Colehill-lane, f., y.r. 153*l.* 8s. 1,675
October 9.—By Bisley & Sons.
Rotherhithe.—81 and 83, Hawkstone-rd., u.t. 48 yrs., g.r. 6*l.*, y.r. 67*l.* 12s. 545
49 and 51, Derrick-st., f., y.r. 41*l.* 12s. 410
By Browett & Taylor.
Saffron Walden, Essex.—Church-st., range of stabling, workshops, and yard, f., y.r. 58*l.* 810
By C. Rawley Cross & Co.
Chelsea.—39, Camera-sq., u.t. 11¾ yrs., g.r. 4*l.* 10s., y.r. 32*l.* 150
Notting Hill.—135, Elgin-cres., u.t. 37 yrs., g.r. 10*l.*, e.r. 60*l.* 400
By Farebrother, Ellis, & Co.
Barnet, Herts.—The Barnet Cattle Market, area 0 a. 1 r. 16 p., f., as a going concern 4,500
Sutton, Surrey.—Benhill-st., Avon House and 2¼ a., f., p. 2,500
By C. C. & T. Moore.
Limehouse.—49 and 66, Clemence-st., u.t. 70 yrs., g.r. 9*l.*, y.r. 78*l.* 740
Mile End.—468, Mile End-rd., f., y.r. 31*l.* 4s. 470
Forest Gate.—34, Forest-rd., f., e.r. 28*l.* 325
Mile End.—48, Grove-rd., u.t. 39 yrs., g.r. 4*l.* 10s., e.r. 48*l.* 425
Poplar.—90 to 100 (even), Glengall-rd., u.t. 39 yrs., g.r. 24*l.*, y.r. 170*l.* 700
By Newbon, Edwards, & Shephard.
Barnsbury.—1, Barnsbury-gr., f., y.r. 45*l.* 800
49, Thornhill-rd., f., y.r. 75*l.* 1,400
Camden Town.—162, Camden-rd., and stabling, u.t. 35 yrs., g.r. 6*l.*, y.r. 85*l.* 16s. 800
Holloway.—35, Arthur-rd., u.t. 39¾ yrs., g.r. 6*l.* 6s., y.r. 42*l.* 430
New Southgate.—7, Lauder-ter., f., w.r. 20*l.* 16s. 250
October 9.—By Moreton Riches.
Wandsworth.—4 to 11, Dighton-rd., u.t. 74 yrs., g.r. 36*l.*, y.r. 291*l.* 2,200
By Stimson & Sons.
Old Kent-rd.—The Royal Deaf and Dumb Asylum, area 28,500 ft., f., p. 16,750
Battersea.—38, Almeric-rd., u.t. 223 yrs., g.r. 7*l.* 4s., y.r. 45*l.* 475
28, Lindore-rd., u.t. 223 yrs., g.r. 6*l.* 6s., y.r. 40*l.* 380
Clapham.—38, Jeffreys-rd., u.t. 65 yrs., g.r. 12*l.* 10s., y.r. 60*l.* £430
Stockwell.—22, Tasman-rd., u.t. 72½ yrs., g.r. 6*l.* 6s., e.r. 35*l.* 325
Blackfriars.—17, Great Charlotte-st. (S.), u.t. 9½ yrs., g.r. 5*l.* 8s., y.r. 110*l.* 350
25 to 29, Great Charlotte-st. (S.), u.t. 16½ yrs., g.r. 50*l.*, y.r. 270*l.* 1,300
Norwood.—24, Westow-st. (S)., u.t. 14½ yrs., peppercorn g.r., y.r. 54*l.* 360
Peckham.—78 and 80, Lugard-rd., u.t. 73 yrs., g.r. 9*l.*, w.r. 1*l.* 4s. 500
Ansdell-rd., &c., nine peppercorn g. rents, with reversions in 70 and 67 yrs. (in lots) 825
New Kent-rd.—No. 206, u.t. 22 yrs., g.r. 10*l.*, y.r. 45*l.* 300
Old Kent-rd.—Nos. 875, 877, and 879, area 7,100 ft., f., y.r. 106*l.* 12s. 1,750
Walworth.—Kingston-st., f.g.r. 12*l.* 12s., with reversion in 80 yrs. 300
Lambeth.—17, Tower-st., f., y.r. 40*l.* 6s. 380
October 10.—By Beard & Son.
Battersea.—97 and 101, Falcon-rd., u.t. 41 yrs., g.r. 10*l.*, y.r. 76*l.* 910
Caledonian-rd.—39 to 46, Charlotte-st., u.t. 19 yrs., g.r. 42*l.*, y.r. 256*l.* 1,480
Maida Vale.—Bristol-gdns., i.g. rents, 31*l.* 10s., u.t. 48 yrs., g.r. 2*l.* 555
By Cooper & Goulding.
Holloway.—24, Fairmead-rd., u.t. 65 yrs., g.r. 9*l.*, y.r. 50*l.* 480
110, Dartmouth Park Hill, u.t. 74 yrs., g.r. 7*l.*, y.r. 34*l.* 335
By Reynolds & Eason.
Oxford-st.—57 to 62, South Molton-st., area 5,750 ft., building lease for 80 yrs., let at per annum 800
By R. Price & Son.
South Lambeth.—15, 17, 23, 25, and 27, Carroun-rd., f., y.r. 162*l.* 2,855
Kennington. — Meadow-rd., freehold stabling premises, area 2,400 ft., w r. 29*l.* 420
31, 47, and 49, Meadow-rd., f., y.r. 98*l.* 2,015
Brixton.—61 to 67 (odd), Treherne-rd., f., y.r. 136*l.* 2,310
58, Treherne-rd., u.t. 61 yrs., g.r. 5*l.* 5s., y.r. 34*l.* 345
Clapham.—34 and 38, Wilkinson-st., u.t. 60 yrs., g.r. 13*l.*, y.r. 80*l.* 875
By Towers, Ellis & Co.
King's Cross.—Tiber-st., f.g.r. 12*l.*, reversion in 40 yrs. 380
Stroud Green.—Ridge-rd., f.g.r. 31*l.* 10s., reversion in 77 yrs. 830
Clapham.—Sugden-rd., f.g.r. 49*l.*, reversion in 83 yrs. 1,290

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; w.r. for weekly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.		
Hard Stocks	1 13 0	per 1,000 alongside, in river	
Rough Stocks and Grizzles	1 10 0	,,	,, ,,
Facing Stocks	2 12 0	,,	,, ,,
Shippers	2 5 0	,,	,, ,,
Flettons	1 8 0	,,	at railway depôt
Red Wire Cuts	1 12 0	,,	,, ,,
Best Fareham Red	3 12 0	,,	,, ,,
Best Red Pressed Ruabon Facing	5 5 0	,,	,, ,,
Best Blue Pressed Staffordshire	4 5 0	,,	,, ,,
Do., Bullnose	4 11 0	,,	,, ,,
Best Stourbridge Fire Bricks	4 8 0	,,	,, ,,
GLAZED BRICKS.			
Best White and Ivory Glazed Stretchers	13 0 0	,,	,, ,,
Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats	17 0 0	,,	,, ,,
Double Stretchers	19 0 0	,,	,, ,,
Double Headers	16 0 0	,,	,, ,,
One Side and two Ends	19 0 0	,,	,, ,,
Two Sides and one End	20 0 0	,,	,, ,,
Splays, Chamfered, Squints	20 0 0	,,	,, ,,
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	,,	,, ,,
Quoins, Bullnose, and Flats	14 0 0	,,	,, ,,
Double Stretchers	15 0 0	,,	,, ,,
Double Headers	14 0 0	,,	,, ,,
One Side and two Ends	15 0 0	,,	,, ,,
Two Sides and one End	15 0 0	,,	,, ,,
Splays, Chamfered, Squints	14 0 0	,,	,, ,,
Seconds Quality White and Dipped Salt Glazed	8 0 0	,,	less than best.
Thames and Pit Sand	7 0	per yard, delivered.	
Thames Ballast	6 0	,,	,,
Best Portland Cement	31 0	per ton, delivered.	
Best Ground Blue Lias Lime	22 0	,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 10s. 6d. per yard, delivered.
Stourbridge Fire-clay in sacks, 27s. 0d. per ton at rly. dpt.

PRICES CURRENT (*Continued*).

STONE.

	s. d.		
Ancaster in blocks	1 11	per ft. cube, deld. rly. depot	
Bath ,,	1 7	,,	,,
Farleigh Down Bath	1 8	,,	,,
Beer in blocks	1 6	,,	,,
Grinshill ,,	1 10	,,	,,
Brown Portland in blocks	2 2	,,	,,
Darley Dale in blocks	2 4	,,	,,
Red Corsehill ,,	2 5	,,	,,
Closeburn Red Freestone	2 1½	,,	,,
Red Mansfield ,,	2 4	,,	,,
YORK STONE—*Robin Hood Quality.*			
Scappled random blocks	2 10	,,	,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per foot super.	
6 in. Rubbed two sides Ditto, Ditto	2 6	,,	,,
3 in. Sawn two sides slabs (random sizes)	0 11½	,,	,,
2 in. to 2½ in. Sawn one side slabs (random sizes)	0 7½	,,	,,
1½ in. to 2 in. ditto, ditto	0 6	,,	,,
BEST HARD YORK—			
Scappled random blocks	3 0	per ft. cube	,,
6 in. sawn two sides, landings to sizes (under 40 ft. sup.)	2 8	per ft. super.	,,
6 in. Rubbed two sides Ditto		,,	,,
3 in. sawn two sides slabs (random sizes)	1 2	,,	,,
2 in. self-faced random flags	0 5	,,	,,
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube. deld. rly. depôt.	
,, ,, ,, 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.	
,, ,, ,, 3 in. do.	1 2½	,,	,,

SLATES.

in. in.	£ s. d.	
20×10 best blue Bangor	12 5 0	per 1000 of 1200 at ry. dep
20×12 ,, ,, ,,	13 5 0	,, ,,
20×10 best seconds ,,	11 15 0	,, ,,
20×12 ,, ,, ,,	12 17 6	,, ,,
16×8 best ,,	6 17 6	,, ,,
20×10 best blue Portmadoc	11 7 6	,, ,,
16×8 best blue Portmadoc	6 5 0	,, ,,
20×10 best Eureka unfading green	15 0 0	,, ,,
20×12 ,, ,,	16 10 0	,, ,,
18×10 ,, ,,	11 10 0	,, ,,
16×8 ,, ,,	7 10 0	,, ,,
20×10 permanent green	10 10 0	,, ,,
18×10 ,, ,,	9 0 0	,, ,,
16×8 ,, ,,	6 5 0	,, ,,

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1,000, at rly. depôt.
Hip and valley tiles	3 7	per doz. ,, ,,
Best Broseley tiles	50 0	per 1,000 ,, ,,
Do. Ornamental tiles	52 6	,, ,, ,,
Hip and valley tiles	4 0	per doz. ,, ,,
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 ,, ,,
Do. ornamental Do.	60 0	,, ,, ,,
Hip tiles	4 0	per doz. ,, ,,
Valley tiles	3	,, ,, ,,
Best Red or Mottled Staffordshire Do. (Peakes)	51 9	per 1,000 ,, ,,
Do. Ornamental Do.	54 6	,, ,, ,,
Hip tiles	4 1	per doz. ,, ,,
Valley tiles	3 8	,, ,, ,,

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 10 0	16 10 0
Deals: best 3 by 9	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	,, ,, ,,
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	9 10 0
2 in. by 4½ in. and 2 in by 5 in.	8 12 0	9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0

JOINERS' WOOD. At per standard.

White Sea: First yellow deals, 3 in. by 11 in.	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
,, ,, 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 10 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0

PRICES CURRENT (*Continued*).

WOOD.

	At per standard. £ s. d.	£ s. d.
White Sea and Petersburg :—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
,, ,, 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals 3 in. by 11 in.	13 10 0	14 10 0
,, ,, ,, 3 in. by 9 in.	12 10 0	13 10 0
,, ,, ,, battens	9 10 0	10 10 0
Pitch-pine : deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	33 0 0	upwards.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 4 6
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 3 6
Small ,, ,,	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
¾ in. do. do.	0 0 6½	- - -
Dry Mahogany—		
Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 10 0	20 0 0
American Whitewood Planks—		
Per ft. cube	0 4 0	- - -
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 1 6
1 in. by 7 in. white, planed and shot	0 11 6	0 13 6
1 in. by 7 in. white, planed and matched	0 12 0	0 14 0
1¼ in. by 7 in. white, planed and matched	0 14 6	0 16 6
¾ in. by 7 inch yellow matched and beaded or V-jointed boards	0 11 0	0 13 6
1 in. by 7 in. do. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6-in. at 6d. to 9d. per square less than 7-in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders ,, ,,	8 2 6	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6	8 17 6
Flitch Plates	8 5 0	8 15 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 2 6	8 5 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 15 0	8 5 0
Staffordshire Crown Bars, good merchant quality	8 5 0	8 15 0
Staffordshire "Marked Bars"	10 10 0	- - -
Mild Steel Bars	9 0 0	9 10 0
Hoop Iron, basis price	9 5 0	9 10 0
,, ,, galvanised	16 0 0	. . .
(* And upwards, according to size and gauge.)		
Sheet Iron, Black.—		
Ordinary sizes to 20 g.	10 0 0	- - -
,, ,, to 24 g.	11 0 0	- - -
,, ,, to 26 g.	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes 6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.	14 5 0	- - -
Sheet Iron, Galvanised, flat, best quality :—		
Ordinary sizes to 20 g.	16 0 0	- - -
,, ,, 22 g. and 24 g.	16 10 0	- - -
,, ,, 26 g.	18 0 0	- - -
Galvanised Corrugated Sheets :—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.	14 5 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12 0 0	- - -
,, ,, 22 g. and 24 g.	13 0 0	- - -
,, ,, 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in.	9 5 0	9 15 0
(Under 3 in. usual trade extras.)		

LEAD, &c.

	Per ton in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3 lbs. & up.	13 10 0	- - -
Pipe in coils	14 0 0	- - -
Soil Pipe	16 10 0	- - -
Compo Pipe	16 10 0	- - -
ZINC—Sheet—		
Vieille Montagne ton	25 0 0	- - -
Silesian	24 10 0	- - -
COPPER—		
Strong Sheet per lb	0 0 10	- - -
Thin ,,	0 0 11	- - -
Copper nails ,,	0 0 11	- - -
BRASS—		
Strong Sheet ,,	0 0 9	- - -
Thin ,,	0 0 10	- - -
TIN—English Ingots ,,	0 1 3½	- - -
SOLDER—Plumbers' ,,	0 0 6½	- - -
Tinmen's ,,	0 0 8½	- - -
Blowpipe ,,	0 0 9½	- - -

PRICES CURRENT (*Continued*).

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2½d.	per ft. delivered.
,, fourths	1⅞d.	,, ,,
21 oz. thirds	3½d.	,, ,,
,, fourths	2½d.	,, ,,
26 oz. thirds	4d.	,, ,,
,, fourths	3½d.	,, ,,
32 oz. thirds	5d.	,, ,,
,, fourths	4½d.	,, ,,
Fluted sheet, 15 oz.	3d.	,, ,,
,, 21 ,,	4d.	,, ,,
⅛ Hartley's Rolled Plate	1½d.	,, ,,
⅜ ,, ,, ,,	2d.	,, ,,
½ ,, ,, ,,	2½d.	,, ,,

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes or barrels	per gallon	0 2 5
,, ,, ,, in drums	,,	0 2 8
Boiled ,, ,, in pipes or barrels	,,	0 2 7
,, ,, ,, in drums	,,	0 2 10
Turpentine, in barrels	,,	0 3 1
,, in drums	,,	0 3 3
Genuine Ground English White Lead	per ton	21 0 0
Red Lead, Dry	,,	20 0 0
Best Linseed Oil Putty	per cwt.	0 8 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 6
Superfine Hard-drying Oak, for Seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Superfine Pale Copal Body	1 4 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

"Thirty Years an Architect" (Letters without a signature are put into the waste-paper basket unread).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays*. N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

ABERDEEN.—For causewaying part of Albert Quay, Contract No. 2, for the Harbour Commissioners. Mr. R. Gordon Nicol, Harbour Engineer, Aberdeen :—

	Temporary Causewaying.
McAdam & Co., Charlotte-street, Aberdeen	£655 3 8

ASTON MANOR.—For the erection of a reading-room, Aston Cross, for the Urban District Council. Mr. G. H. Jack, C.E., Council House, Albert-road, Aston Manor, Birmingham :—

A. Ford	£2,177	A. G. Teale	£1,930
A. Heaps	2,133	Lee & Sons	1,899
Nicholls & Co.	2,050	Whitehouse & Sons	1,859
W. J. Morris	2,047	Colin Hughes	1,850
D. Roberts	2,000	T. Johnson	1,847
W. Harvey Gibbs	1,998	Smith & Pitts, Birmingham*	1,777
W. & J. Webb	1,993		
E. Crowder	1,950		

BARNSLEY.—For the erection of four houses, &c., Tinker-lane, Hoyland Common. Messrs. Wade & Turner, architects, 10, Pitt-street, Barnsley. Quantities by the architects :—

Building.—Samuel Hawke, Hoyland Common*	£588 8 0
Joinery and Plumbing.—J. & F. Hammerton, Warsbrodale*	246 0 0
Plastering.—J. Richardson, Dewsbury*	48 0 0
Slating.—M. Fleming, Barnsley*	55 15 0
Painting.—H. J. Cheshire, Barnsley*	18 16 6

BRECHIN (N.B.).—For the execution of sewerage works, Ferryden, for the District Committee, Forfar County Council. Mr. John Sun, C.E., Montrose :—

Pert & Son, Ferryden, Montrose*	£400

BRISTOL.—For the construction of a brick culvert (217 yards) and manholes through land, Maia-road, Bristol. Messrs. Holbrow & Oaten, surveyors, 9, Clare-street, Bristol :—

W. Thomas	£785 0	G. Hedges*	£545 4
E. Walter	780 0	G. Jones	537 0
A. Brittan	650 0	[All of Bristol.]	

CORK.—For rebuilding premises for Messrs. Baker & Wright. Mr. Arthur Hill, architect, 22, Georges-street, Cork :—

Hamilton & Co.	£2,402	T. Kearns	£2,118
A. Gaul	2,300	D. Kelleher	2,077
P. Murphy	2,270	S. Hill	2,037
E. & P. O'Flynn	2,150	T. Delany & Co.*	1,900

CROYDON.—For furniture to be fixed at the Swan and Sugar Loaf Hotel, Brighton-road, Croydon, for Mr. J. E. Brown. Mr. Frank Windsor, architect, 9 and 10, Bank Buildings, George-street, Croydon :—

Waring & Co.*	£143

DORCHESTER.—For excavating for and laying about 3,300 yds. run of C.I. water mains, for the Town Council. Mr. G. J. Hunt, C.E., Guildhall-chambers, Dorchester. Quantities by the Engineer :—

S. G. Hodges, Dorchester*	£208 18 1

DORCHESTER.—For the execution of road works, Maumbury Way, for the Town Council. Mr. G. J. Hunt, C.E., Borough Engineer, North-square, Dorchester. Quantities by the Engineer :—

For making-up road and laying sewer, &c.

Cooke & Co., Westminster*	£603 4 8

For laying 1,450 yards surface water drains to river.

Cooke & Co., Westminster*	£797 1 2

DUDLEY.—For the Upper Standard School, Dudley, for the School Board. Messrs. Barrowcliff & Allcock, architects, Mill-street, Loughborough :—

	£	Asphalting.
Jakeman & Round	14,844	Not given.
E. Seckerson	13,220	,,
Walter G. Brown	12,300	£350 0
F. Lindsay Jones	12,152	251 0
John Mallin	12,000	2s. per yard.
Henry Gough	12,000	£375 0
Wm. Hopkins	11,990	Not given.
Oakley & Coulson	11,799	£500 0
Arthur Faulks	11,790	376 10
John Dallow	11,650	Not given.
Wm. Deeley	11,509	£376 13
Mark Round, Dudley†	11,500	260 0
W. Corah	10,960	470 16

FEATHERSTONE (Yorks).—For additions to schools, George-street, for the School Board. Mr. W. Hamilton Fearnley, architect, Station-lane, Featherstone :—

Leak & Sons	£1,820 14 0	G. Clements	£1,360 0 0
G. Spurr	1,659 3 11	G. Daunton & others, Featherstone*	1,352 11 6
M. Dixon	1,525 0 0		
Jackson & Dimberline.	1,499 10 0		

FRINTON-ON-SEA (Essex).—For alterations to brick groyne, for the Urban District Council of Frinton-on-Sea. Mr. T. W. Golds, surveyor, High-street, Thorpe-le-Soken :—

P. G. Oxley, High-street, Walton-on-Naze, Essex	£98

GODALMING.—For the execution of kerbing and tar-paving works, for the Town Council. Mr. J. Herbert Norris, Borough Surveyor, Municipal Offices, Godalming :—

R. D. Danniell	£1,509 11 6	W. H. Wheeler	£1,204 0 0
G. A. Franks	1,246 0 0	Clift Ford	1,169 0 0
W. Norris	1,225 0 0	Streeter and Todhunter	1,068 0 0

GLASGOW.—For additions to asylum, Woodilee, Lenzie, for the Lunacy District Board. Messrs. James Salmon & Son, architects, 53, Bothwell-street, Glasgow :—

Brick, &c., Works.

Goldie & Son	£8,807 4 0
Gilchrist & Son	8,634 0 0
Murdoch & Son	8,218 0 0
Paterson & Son, Ltd.	7,911 7 4
John Kirkwood	7,413 0 0
J. J. & P. McLachlan	6,965 11 3
Shaw & Son	6,844 5 9
Forrest & McLeod, Glasgow*	6,463 6 11

Wright, &c., Works.

Guthrie & Co.	£5,250 0 0
Shaw & Son	5,158 19 2
Laird & Son	5,130 1 4
Miller & Murray	5,026 7 0
John Peter	4,993 15 9
Baxter & Sons	4,633 6 5
Niven & Sons, Glasgow*	4,540 7 10

[*See also page 357.*

COMPETITIONS, CONTRACTS AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
*Designs for Town Hall, Library, &c.	Durban (Natal) Corporation	500*l.*, 300*l.*, and 200*l.*	Dec. 18
*Designs for Extension of Town Hall	Hull Corporation	300*l.*, 200*l.*, 100*l.*	Jan. 31
Designs for University Buildings, Cape of Good Hope	Agnt.-Gen. for Cape of Good Hope	400*l.*, 200*l.*, 100*l.*	do.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Bricks (385,000)	Chorley (Lancs.) Corporation	John Mills, Town Hall, Chorley	Oct. 21
Additions to School, Muiravonside		J. Strang, Architect, Falkirk, N.B.	do.
Drainage Works	Cambusnethan (N.B.) Parish Coun.	W. Calderhead, Parish Offices, Wishaw	do.
Sewers, Manchester-road	Tyldesley U.D.C.	J. B. Smith, Civil Engineer, Tyldesley	do.
Lodge, Novers Hospital	Bristol Corporation	City Engineer, 63, Queen-street, Bristol	do.
School, Rendell-street	Loughborough School Board	Barrowcliff & Alcock, Architects, Mill-street, Loughborough	do.
Road Works, Chalfont-road, &c.	Croydon Town Council	Borough Road Surveyor, Town Hall, Croydon	do.
Stoneware Pipes	Tyldesley (Lancs.) U.D.C.	J. B. Smith, Civil Engineer, Tyldesley	do
Shops, Arthur-street, Belfast		Young & Mackenzie, Architects, Belfast	Oct. 22
Hospital, Carlton	Worksop District Committee	F. Hopkinson, Architect, 40, Bridge-street, Worksop	do.
Sewer, Gawen-terrace, Torpoint	St. German's R.D.C.	F. W. Cleverton, 4, Buckland-terrace, Plymouth	do.
Alterations to School, Robert-street	Sedgley School Board	A. Ramsell, Architect, 187, Wolverhampton-street, Dudley	do.
Chimney Shaft	Swadlincote U.D.C.	G. B. Smedley, Civil Engineer, Gas Wks., Swadlincote, Leics.	do.
Cemetery Works, House, &c.	North Berwick Town Council	G. S. Carfrae, Civil Engineer, 1, Erskine-place, Edinburgh	do.
Road Metal	Annan (N.B.) District Committee	A. V. Hart, Road Surveyor, Ashgrove Villas, Dumfries	do.
Road Works, Astley-road	Hemel Hempstead Corporation	W. R. Locke, Borough Surveyor, Town Hall, Hemel Hempstead	do.
Road Works, Goddard-street	Longton (Staffs.) Town Council	J. W. Wardle, Civil Engineer, Court House, Longton	do.
House at Asylum, Beverley	Visiting Committee	C. W. Hobson, Newbegin, Beverley	do.
Additions to Chapel, Newtown Cunningham	Rev. J. Doherty	D. Conroy, Architect, 21, Shipquay-street, Londonderry	do.
Borehole Works, near Rotherham	Swinton U.D.C.	R. Fowler, Engineer, Station-street, Swinton	do.
Road Works, Wood-street	Willenhall (staffs.) U.D.C.	T. E. Fellows, Civil Engineer, Town Hall, Willenhall	Oct. 23
Sewer, Ely-lane	Tunbridge Wells Corporation	W. H. Maxwell, Civil Engineer, Town Hall, Tunbridge Wells	do.
Alterations to Campsie House	Merthyr Tydfil Guardians	T. Roderick, Architect, Aberdare	do.
*School Rooms at Sidcup	Greenwich Union	T. Dinwiddy & Sons, 12, Crooms Hill, Greenwich	do.
*New Coast Guard Buildings, near Dover	Admiralty	Director of Works Department Admiralty, W.C.	Oct. 24
*Horses, Carts, &c.	London County Council	Parks Department, 11, Regent-street, S.W.	do.
Two Villas, Park-drive, Huddersfield		J. Berry, Architect, 3, Market-place, Huddersfield	do.
Paving Works, Queen's Head-road	Handsworth (Staffs.) U.D.C.	Surveyor, Council House, Handsworth	do.
School, Grange-road	Bradford School Board	T. C. Hope & Son, Architects, 23, Bank-street, Bradford	do.
Culverts	Darlington Corporation	T. & C. Hawkesley, Civil Engineers, 30, Great George-street, S.W.	do.
Road Materials	Romford U.D.C.	C. T. King, Council Offices, Romford	do.
Sewer Extension, St. Monan's, Cupar Fife, N.B.		H. Bruce, Civil Engineer, 67, Crossgate, Cupar Fife	Oct. 25
Two Houses, Silloth, Cumberland		G. Armstrong, Architect, 24, Bank-street, Carlisle	do.
Sewers, Sidford	Honiton R.D.C.	E. G. Warren, Architect, Commercial Chambers, Exeter	do.
Additions to Infirmary	Londonderry Guardians	M. A. Robinson, Civil Engineer, Richmond-street, Londonderry	do.
Sewerage Tanks, &c., Summerseat	Ramsbottom U.D.C.	J. Diggle, Civil Engineer, Heywood, Lancs.	Oct. 27
Hospital, Old Rattray, N.B.		L. & J. Falconer, Architects, Blairgowrie	do.
*Erection of Patent Concrete Partition	Acton Concrete Partition Co., Ltd.	Office of the Company, 76, Finsbury-pavement, E.C.	do.
*Small Laboratory, &c., Union Schools, Up. Edmonton	Strand Union	A. A. Keckwick 15-19, Outer Temple, Strand, W.C.	Oct. 28
*2,425 feet Brick Culvert, &c., at Harlesden	Willesden District Council	Engineer to the Council, Public Offices, Dyne-rd., Kilburn, N.W.	do
*Making up Roads & Paving Open Spaces around Bldngs.	West Ham Union	Clerk's Office, Union Workhouse, Leytonstone, N.E.	Oct. 29
*Preparing, Staining, & Polishing Pitch Pine Flooring.	do.	do.	do.
Additions to County Infirmary, Londonderry		A. E. Murray, Architect, 37, Dawson-street, Dublin	do.
*Alteration of Stifford Board School, &c.	Stifford School Board	C. M. Shiner, 6, 7, and 8, Crutched Friars, E.C.	Oct. 30
*Concrete Car Sheds at Wingrove	Newcastle-on-Tyne Cpn. Twys. Com.	General Manager & Engineer, Manors Power Station, Newcastle	Oct. 31
Rebuilding 52, South Mall, Cork		W. H. Hill & Son, Architects, Cork	do.
Additions to Schools, Beaufort Hill	Llangattock School Board	H. Waters, Architect, Waengoch, Beaufort, Wales	Nov. 3
*Elec. Lighting, Situ Concrete Paving & Heating Appar.	Leyton School Board	W. Jacques, Architect, 2, Fen-court, E.C.	do.
Schools, Ystradgynlais		P. Williams, Tyr Gorof, Ystradgynlais	Nov. 4
*Undergrnd. Sanitry. Conveniences Catford & Lee Green	Borough of Lewisham	Surveyor's Department, Town Hall, Catford	do.
*Two Short Outfall Sewers, Tanks, Engine, &c.	U.D.C. Cannock		do.
*Isolation Hospital at Leavesden Asylum, nr. Watford	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	Nov. 5
Hospital, Helmington-row	Bishop Auckland Board	W. Perkins, Architect, Victoria-street, Bishop Auckland	Nov. 6
*Fog Signal House, &c., Nash Point, Glamorgan	Trinity House Corporation	Trinity House, E.C.	do.
Aqueduct Tunnel (2½ miles) Clifton-with-Norwood	Leeds Corporation	City Engineer, Municipal Offices, Leeds	Nov. 14
*New Lunatic Asylum, near Bromsgrove	Worcestershire County Council	Clerk to Visiting Committee, Shirehall, Worcester	Nov. 15
Road Works, Glasbury, Brecon		C. Butcher, Glasbury	No date
Lodging House, Walker-lane, Derby		J. T. Holford, Architect, 34, Corn Market, Derby	do.
House, Spen-lane, Headingley, near Leeds	Barrow-in-Furness Co-op. Society.	A. E. Kirk, Architect, 13, Bond-street, Leeds	do.
Shop, Duke-street, Hindpool	do.	J. Y. M'Intosh, Architect, Cornwallis-street, Barrow-in-Furness.	do.
Seven Houses, Hartington-street		do.	do.
House, Purley, Surrey	Sowerby Bridge Flour Co., Ltd.	F. O. Moore, Architect, 12, Cornford-grove, Balham, S.W.	do.
Engine House	Stowmarket Co-op. Soc., Ltd.	A. G. Dalzell, Architect, 15, Commercial-street, Halifax	do.
Rebuilding Premises, Bury-street		P. J. Turner, Architect, Stowmarket	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Required.	Salary.	Application to be in
*Building Inspector	Willesden District Council	150*l.*	Oct. 21
*Temporary Assistant in Borough Engineer's Office	Croydon Council	2*l.* 3*s.* per week	Oct. 22
*Architectural Assistant	Kettering U.D.C.	Not stated	Oct. 27
*Foreman of Works	Commissioners of Irish Lights	150*l.*	Oct. 29

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. x. & xxiv. *Public Appointments* xxi.

TENDERS (*Continued*):—

CWMBRAN.—For road works at Cwmbran, for the Urban District Council of Llantarnam. Messrs. B. Lawrence & Son, architects, Newport:—

	Road.	Bridge.	Fence.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Meredith & Co.	3,196 0 0	198 0 0	822 10 0	4,216 10 0
Leadbeter Bros.	2,242 0 0	123 0 0	482 0 0	2,847 0 0
W. A. Linton	2,165 0 0	148 0 0	485 0 0	2,798 0 0
L. R. Lucas	2,256 3 0	256 19 6	395 15 0	2,908 17 6
Geen & Linton	2,134 15 3	171 3 8	480 10 0	2,786 8 11
Dyson Parfitt	1,887 0 0	180 0 0	470 0 0	2,537 0 0
H. C. Parfitt	1,770 0 0	168 0 0	444 0 0	2,382 0 0
C. H. Reed	1,733 0 0	121 0 0	445 0 0	2,299 0 0*
Davies	....	....	....	2,150 0 0

GRAVESEND.—For the erection of mortuary, coach-house, &c., at the hospital, Whitehill-road, Cobham, for the Strood Rural District Council. Mr. G. E. Bond, architect, Pier-chambers, Chatham:—

A. E. Long, Darnley-road, Gravesend* £248

GRAYS (Essex).—For the erection of a working men's social club. Mr. Christopher M. Shiner, architect, 6, 7, and 8, Crutched Friars, E.C.:—

G. Brown	£1,218 0	Brighmore	£1,029 0
Pavitt	1,216 0	J. Brown*	1,008 15
Carter	1,039 5		

GUILDFORD.—For the execution of sewerage works (892 yards), for the Rural District Council. Mr. J. Anstee, C.E., Commercial-road, Guildford:—

Cleft Ford	£675 0 0	Streeters & Todhunter	£523 0 0
W. H. Wheeler.	636 0 0	W. Norris, Farnham, Surrey*.	522 18 9
G. A. Franks	606 0 0		
Ossenton	540 0 0		

HOVE (Sussex).—For the execution of paving and other works, Fourth-avenue, &c. Mr. H. H. Scott, Borough Surveyor, Town Hall, Hove:—

Fourth-avenue.

Parsons & Sons, 118, Church-road, Hove*.... £56

Stoneham-road.

Parsons & Sons, 118, Church-road, Hove* .. £336

KINSALE (Ireland).—For the execution of water-supply works, Carrigaline, for the Rural District Council. Mr. R. Evans, C.E., 53, South Mall, Cork:—

D. Collins	£879 19
W. Wood	861 0
M'Kee & M'Nally	704 0
J. Shine, Bandon†	676 0

† Tender accepted provisionally to loan being granted by Treasury.

LITTLEHAMPTON.—For the supply of quartzite road metal, for the Urban District Council. Mr. Harry Howard, Surveyor, Town Offices, Littlehampton:—

	Per ton.
Paramor & Sons	£0 12 9
Quartzite Co., Ltd.	0 10 10
L. Sommerfeld	0 11 2
Sandell Brothers	0 11 9
The Road Maintenance and Stone Supply Co., Ltd., Gravesend, Kent*.	0 10 9

LONDON.—For the construction of a road bridge, Whittington-road, Bowes Park, for the Southgate Urban District Council. Mr. C. G. Lawson, C.E., Council Offices, Palmer's Green, N.:—

Spiers & Son	£2,148!	Newby Bros., Southgate*	£994!
Norton Bros.	1,200		

MOUNTAIN ASH (Glam.).—For the execution of private street works, West-street, Abercynon, for the Urban District Council. Mr. John Williams, Surveyor, Town Hall, Mountain Ash:—

J. Sutherland	£132 2 7	Reuben Webb, Abercynon*	£106 8 9
E. Taylor	118 8 2		

NEWPORT.—For the erection of new laboratory, lecture-room, and classrooms at the Newport Intermediate Schools, for the Board of Governors. Messrs. B. Lawrence & Son, architects, Newport:—

John Linton	£1,599	W. H. Blackburn	£1,579
C. H. Reed	1,500	Leadbeter Bros.*	1,447

NEWPORT.—For erecting the Rising Sun, Shaftesbury-street, for Mr. Richard Mann. Messrs. B. Lawrence & Son, architects, Newport:—

Blackburn	£2,898	Jerrett & Fisher	£2,700
C. H. Reed	2,850	J. J. Partridge	2,649
J. Hooper	2,850	Morgan & Co.	2,599
R. H. Parkyn	2,800	Leadbeter Bros.	2,549
Linton & Co., Ltd.	2,799	Richards, Ltd.	2,494
John Charles	2,748	E. C. Jordon†	2,475

PONTILANFRAITH (Wales).—For the erection of twenty cottages for the Tredegar Building Club. Mr. A. O. Evans, architect, Pontypridd, Mon.:—

W. Powell	£189 0	Henry Rees, Blackwood, Mon.*	£174 0
Ellis Williams	183 0	Williams & Co.	168 15
Thos. Jenkins	181 15		

ST. ALBANS.—For the erection of schools, &c., at the Camp, for the St. Peter Rural School Board. Mr. F. W. Kinneir Tarte, architect, St. Albans. Quantities by the architect:—

Vail & Co.	£1,385 0 0
Whibley & Jarvis	1,294 0 0
E. Dunham	1,280 0 0
Hammond & Sons	1,207 13 9
Miskin & Sons	1,175 0 0

[All of St. Albans.]

SALISBURY.—For the construction of Roman-road and others, Bemerton, for the Earl of Pembroke. Messrs. Lemon & Blizzard, surveyors, 38, Silver-street, Salisbury:—

J. C. Trueman, Swanley Junction, Kent* £1,700

SKEWEN (Wales).—For the erection of schools, Dynevor, for the Building Committee. Messrs. Martyn & Lloyd, architects, Dynevor Post-office, Neath:—

Ogley L. David	£575	Thomas & Rees, Dynevor, Neath	£519
S. Harris	550		

SOUTHBOROUGH.—For new schools, for Southborough School Board. Mr. C. H. Strange, architect. Quantities by Mr. Henry Elwig, Tunbridge Wells:—

Punnett & Son	£8,148	Gann & Co.	£7,160
Turner & Co.	8,135	Leney & Son	6,999
Crates & Son	8,000	Martin & Co.	6,954
Goodwin Bros.	7,719	Strange & Sons, Tunbridge Wells†	6,848
J. Jarvis	7,253		
Davis & Leaney	7,199		

STANFORD-LE-HOPE (Essex).—For the erection of two cottages. Mr. Christopher M. Shiner, architect, 6, 7, and 8, Crutched Friars, E.C.:—

Sullings & Cooke* £526

STOCKPORT.—For the execution of street works, Myrtle-street, &c., for the Corporation. Mr. John Atkinson, C.E., St. Petersgate, Stockport:—

W. H. Williams	£1,664 2 8	W. H. Eva	£1,360 18 10
N. Beddow	1,632 16 0	Hayes Bros., Old-road, Stockport*	1,296 11 0
Gosling & Stafford	1,488 12 0		

SUTTON.—For erection of house, Mulgrave-road, Sutton, Surrey, for Mr. G. E. Bromage. From plans by Mr. Cecil Sharp, architect, of 11, Old Queen-street, Queen Anne's-gate, S.W.:—

Huntley Bros.	£3,387	J. B. Potter	£2,274
F. Clarke	3,350	E. J. Buroand*	2,203
W. J. Baker	2,500		

THORNTON (Lancs.).—For additions to schools, for the School Board. Messrs. Drummond, architects, Preston-street, Fleetwood:—

Thomas Riley, Fleetwood £839 2 6

TILBURY DOCK (Essex).—For the erection of six cottages. Mr. Christopher M. Shiner, architect, 6, 7, and 8, Crutched Friars, E.C.:—

J. Brown* £1,296

TURRIFF (N.B.).—For additions, &c, to the Central Auction Mart. Messrs. Jas. Duncan & Son, architects, Turriff:—

Masonry.—Alex. Massie, Turriff* ....
Carpentry.—G. Milne, Forgue, Huntley*
Slating.—Gammack & Co., Turriff* .... } £529 4
Plumbing.—Duthie & Sons, Turriff* ....

UTTOXETER.—For sewage disposal works, Uttoxeter. Messrs. Wilcox & Raikes, engineers, Birmingham:—

Graham & Sons	£17,300 0 0	Jones & Sons	£14,646 5 0
J. Bennson	16,855 0 0	G. Bell	14,561 0 0
Embrey, Ltd.	16,573 0 0	W. & J. Foster	14,230 0 0
F. Woolley	15,905 0 0	Morley & Sons	14,115 6 7
Jowett Bros.	15,275 10 4	R. W. Barker	14,047 9 0
J. J. Warner	15,268 0 0	Bower Bros.	13,926 0 0
G. F. Tomlinson	14,990 0 0	F. Barter	13,913 0 0
Cooke & Co.	14,968 0 0	Barker Bros.	13,828 0 0
J. S. Dawson	14,917 10 6	T. Vale	13,800 0 0
Johnson & Langley	14,815 0 0	Lowe & Sons	13,690 0 0
G. Trentham	14,716 0 0	Smith & Sons	13,171 0 0
J. & T. Binns	14,703 2 3	John Mackay, Smethwick*	12,997 0 0

WEYBRIDGE.—For the supply of road materials, for the Urban District Council. Mr. J. S. Crawshaw, Surveyor, Council Offices, Weybridge:—

Forage.

Pease & Son ..... As per schedule.

Cartage.

J. G. Higgs ..... ,, ,,
J. Randall ..... ,, ,,

Clandon Pit Flint (1,000 yards).

John Nicholas ..... 7s. 8d. per yard.

Ten-ton Road Roller.

Alfred J. Ward ..... £1 4 6 per day.

Kerb Channelling, &c.

Hard Stone Firms Co. ..... As per schedule.

Local Stone (1,000 yards).

W. F. Egerton ..... 3s. per yard.

WILLESDEN.—For additions to the Harlesden Public Library, for the District Council. Mr. John Cash, architect, 28, Newman-street, Oxford-street, W.:—

Spiers & Sons	£1,449	L. F. Lamplough	£1,242
J. & W. Easterbrook	1,327	The General Builders, Ltd.	1,137
J. Appleby	1,274		

WIRRAL (Cheshire).—For the construction of Gayton Hill-road, Heswell, for the Rural District Council. Mr. Thomas Davies, surveyor, 33, Kingsland-road, Birkenhead:—

Robert Amery	£1,632 2 0	Samuel Hutton, Stamford-road, Bowden*	£908 7 7
Maddock & Co.	1,490 5 0		
Robt. Hughes	1,100 0 0		

WOLVERHAMPTON.—For the erection of a hospital, Park-road west, for the Committee of the Wolverhampton and District Hospital for Women. Mr. A. Eaton Painter, architect, 43, Lichfield-street, Wolverhampton. Quantities by Mr. Henry Vale, Darlington-street, Wolverhampton:—

H. Lovatt	£12,787	Midland Building Co.	£11,775
H. and S. Ham.	12,740	F. Herbert	11,685
Lowe & Son	12,556	H. Willcock	11,505
J. Bowater	12,533	H. Gough, Wolverhampton*	11,400
Speake & Sons	12,067		
Lindsay Jones	11,850		
G. Cave	11,800		

LONDON SCHOOL BOARD TENDERS.

AT the last meeting of the London School Board, the Works Committee submitted the following lists of tenders. Mr. T. J. Bailey is the Board's Architect:—

** Recommended for acceptance.*

BONNER-STREET.—Improvements to infants' school. Enclosing present covered playground and forming hall; extending south-west classroom; redividing, re-stepping, and forming new babies' room, and classroom for fifty; enlarging present babies' room to form classroom for forty; removing old schoolkeeper's apartments, also cloakrooms, &c., and forming new cloakrooms, lavatory, and girls' teachers' room and corridor; providing new infants' entrance, cloakroom, and teachers' water-closet. Revised accommodation, 314; net gain, twenty-two:—

Wall & Co.	£3,270	C. Cox	£2,886
Snewin Bros & Co.	3,160	McCormick & Sons	2,794
W. M. Dabbs	3,147	Lawrance & Sons	2,747
Gregar & Son	3,047	Williams & Son	2,689
Shurmur & Sons, Ltd.	3,033	Dearing & Son	2,512
Marchant & Hirst	2,978	Treasure & Son, London and Shrewsbury*	2,444
Grover & Son	2,962		
Patman & Fotheringham, Ltd.	2,952		

BROWNHILL-ROAD.—Manual training centre for forty children, with gymnasium over:—

F. and H. F. Higgs	£3,438	Smith & Sons, Ltd.	£3,115
Rice & Son	3,343	Johnson & Co.	3,107
Mitchell & Son	3,295	T. D. Leng	3,004
Bulied & Co.	3,293	Johnson & Co., Ltd.	2,961
J. Appleby	3,256	J. & M. Patrick	2,920
Holliday & Greenwood, Ltd.	3,183	Garrett & Son	2,912
Lawrance & Sons	3,178	Thomas & Edge*	2,760
J. and C. Bowyer	3,135		
Treasure & Son	3,122		

CHURCH MANOR-WAY.—Providing and fixing complete low-pressure hot-water apparatus to fifteen classrooms, three halls, cloakrooms, corridors and lavatories (all departments); also to drawing classroom on third floor:—

Williams & Sons (Cardiff), Ltd.	£690	Harlow & Son	£557
Strode & Co.	633	J. & F. May	550
R. Clarke	626	Duffield & Sons	498
Wippell Bros. & Row	625	J. Grundy	497
Wenham & Waters, Ltd.	580	Werner, Pfleiderer & Perkins, Ltd.*	474

HAWLEY-CRESCENT.—Altering and refitting all offices with separate pan-closets, refitting all lavatories, and providing new drainage:—

Godson & Sons	£2,921 0 0	Johnson & Co.	£2,401 0 0
Killingback & Co.	2,884 0 0	G. Neal	2,274 0 0
Marchant & Hirst	2,751 0 0	Williams & Son	2,206 0 0
Maxwell Bros., Ltd.	2,662 0 0	J. Peattie	2,159 10 0
McCormick & Sons	2,589 0 0	R. P. Beattie	2,155 5 5
		F. Bull*	2,126 0 0

LINDEN LODGE.—Providing and fixing heating and cooking apparatus, &c.:—

Cannon & Sons .... £119 0 | Benham & Sons* .. £46 10

[See also next page

OLD WOOLWICH-ROAD.—Enlargement :— Boys, 50; girls, 50; infants, 50. Heating by open fires :—

Killby & Gayford	£1,946 0	Garrett & Son ..	£1,729 0
J. Appleby	1,903 0	J. Greenwood ..	1 670 0
T. L. Green	1,839 0	Johnson & Co., Ltd.	1,651 0
Lorden & Son ..	1,788 15	J. & C. Bowyer..	1,646 0
Rice & Son.....	1,784 0	E. Triggs	1,580 0
Bulled & Co.	1,755 0	T. D. Leng*	1,520 0
F. & H. F. Higgs	1,753 0		
Smith & Sons, Ltd.	1,742 0		

REDVERS-STREET.—Providing and fixing independent boiler, and extending apparatus to classrooms (G and I), including cutting out tubular boiler and altering coils :—

Fraser & Son.....	£181 0	J. Grundy	£125 0
Wontner-Smith, Gray, & Co.	136 0	W. Simmons....	109 0
R. Clarke	126 0	J. & F. May....	105 10
Stevens & Sons.....	126 0	Defries & Sons, Ltd.*	89 0

RUSHMORE-ROAD (Girls).—Removing existing partitions, and providing sliding glazed partitions to re-divide classrooms D and E into three rooms; reversing the stepped flooring in same classrooms to obtain left lighting; altering doorways and lengthening windows; building buttress and piers to strengthen the main walls :—

T. L. Green....	£719 0 0	Lawrance & Sons	£604 0 0
London School Furniture Co.	712 16 6	Barrett & Power	598 0 0
W. Martin	679 0 0	F. & F. J. Wood	597 0 0
McCormick & Sons	640 0 0	Marchant & Hirst	539 0 0
		F. Bull*	497 0 0

SANDHURST-ROAD.—New school. Accommodation :—Boys, 380; girls, 380; infants, 382; total, 1,142. Graded school on three stories. Halls—Boys', 57 ft. 3 in. by 30 ft.; girls', 57 ft. 3 in. by 30 ft.; infants', 57 ft. 3 in. by 29 ft. 7½ in. Classrooms—Boys', 60, 48, 48, 48, 48, 48, 40, 40; girls', 60, 48, 48, 48, 48, 48, 40, 40; infants', 60, 50, 48, 48, 48, 48, 40, 40. Drawing-class and science room, 1,176 ft. area. Heating by open fires and stoves :—

T. L. Green	£26,748	Smith & Sons, Ltd.	£24,379
W. Downs	26,279	J. & C. Bowyer	24,299
Patman & Fotheringham, Ltd.	25,376	Treasure & Son....	24,083
Johnson & Co., Ltd.	25,023	F. & H. F. Higgs..	23,983
Mitchell & Son	24,825	Garrett & Son	23,896
Lawrance & Sons ..	24,813	Marsland & Sons ..	23,662
Wallis & Sons.....	24,682	J. & M. Patrick....	22,982
Stimpson & Co.....	24,460	Holliday & Greenwood, Ltd.*	22,925
Miskin & Sons	24,425		

SURREY-SQUARE.—Physically defective centre for forty children (two classrooms of twenty each) :—

Rice & Son	£2,887 0	Johnson & Co., Ltd.	£2,551 0
Garrett & Son....	2,849 0	Lathey Bros.	2,487 0
F. & H. F. Higgs	2,755 0	Stimpson & Co...	2,450 0
Bulled & Co.	2,687 0	Outhwaite & Son	2,418 0
Smith & Son	2,660 0	Johnson & Co. ..	2,412 10
J. Greenwood....	2,610 0	T. D. Leng.....	2,341 0
W. Downs	2,607 0	Marsland & Sons*	2,331 0
Lorden & Son....	2,555 0		

WARPLE-WAY.—Repairing stoves :—
CHICKSAND-STREET.—Repairing stoves :—

	Warpleway.	Chicksand-street.
J. Bond	£11 0*	£10 12*
W. G. Cannon & Sons ..	—	18 0
E. Coules & Son	11 10	19 10
Hendry & Pattisson, Ltd.	13 5	18 10
Rockhill Bros.	—	19 0
Wontner-Smith, Gray, & Son	16 19	18 18

B. NOWELL & CO.
STONE MERCHANTS & CONTRACTORS.
Chief Office.—*Warwick Road, KENSINGTON.*
Norway, Guernsey, and Leicestershire Granite, Kerb, Pitching, and Yorkshire Stone.
ESTIMATES GIVEN FOR EVERY DESCRIPTION OF ROAD MAKING.

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE noon on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

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READING CASES, { NINEPENCE EACH. By Post (carefully packed) 1s.

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Architects' Designs are carried out with the greatest care.
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GREENHOUSES,
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Bank, Office, & Shop Fittings.
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ESTIMATES GIVEN ON APPLICATION.

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FOR ALL THE PROVED KINDS OF BATH STONE.
FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

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The Ham Hill and Doulting Stone Co.
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QUANTITIES, &c., LITHOGRAPHED accurately and with despatch. [Telephone No. 6d Westminster.
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Original Hartham Park Box Ground & Corsham.
EVERY BLOCK BRANDED WITH OUR REGISTERED TRADE MARK.
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Polonceau Asphalte.
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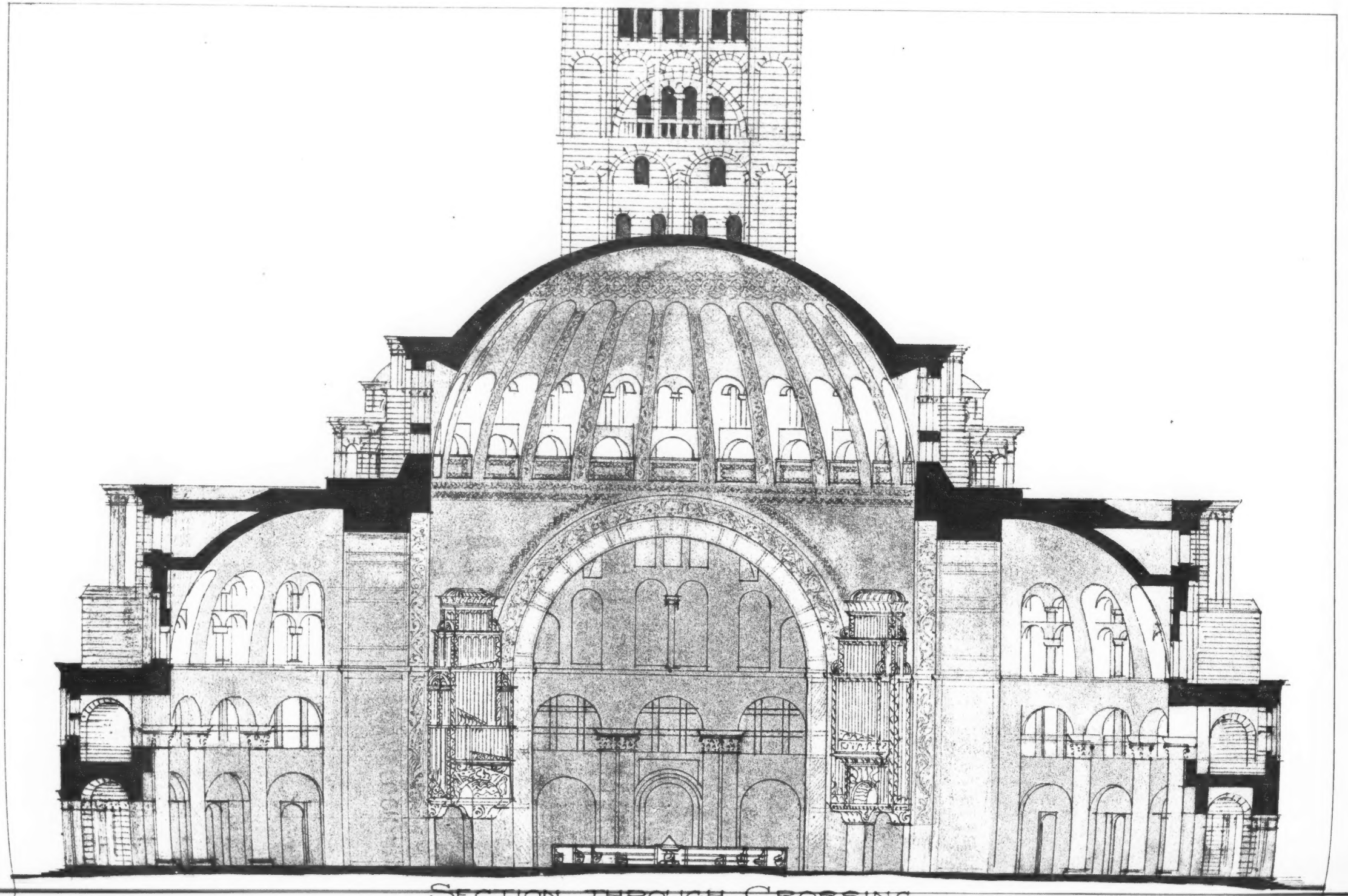

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LOOKING TOWARDS NAVE

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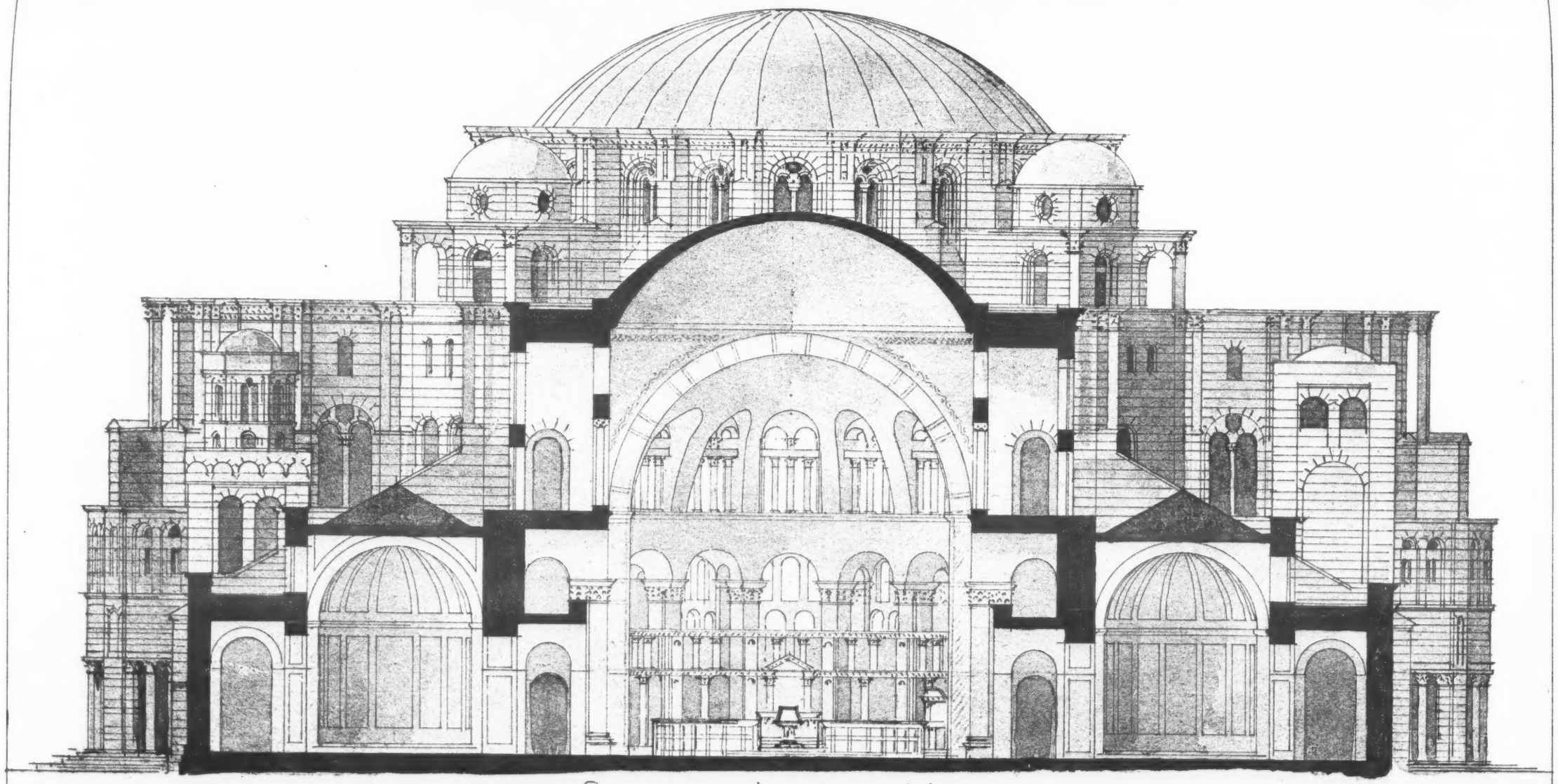

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AND CHAPELS

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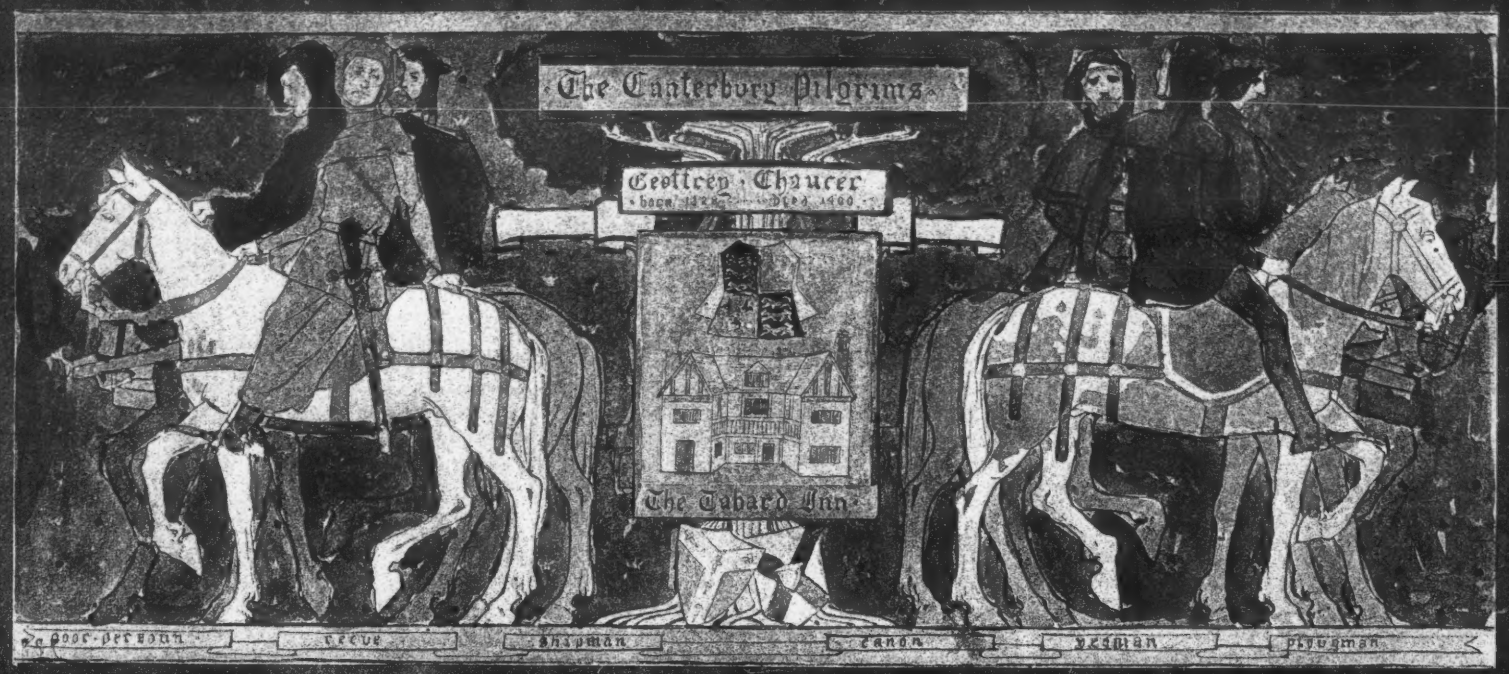
By Professor Beresford Pite, F.R.I.B.A.

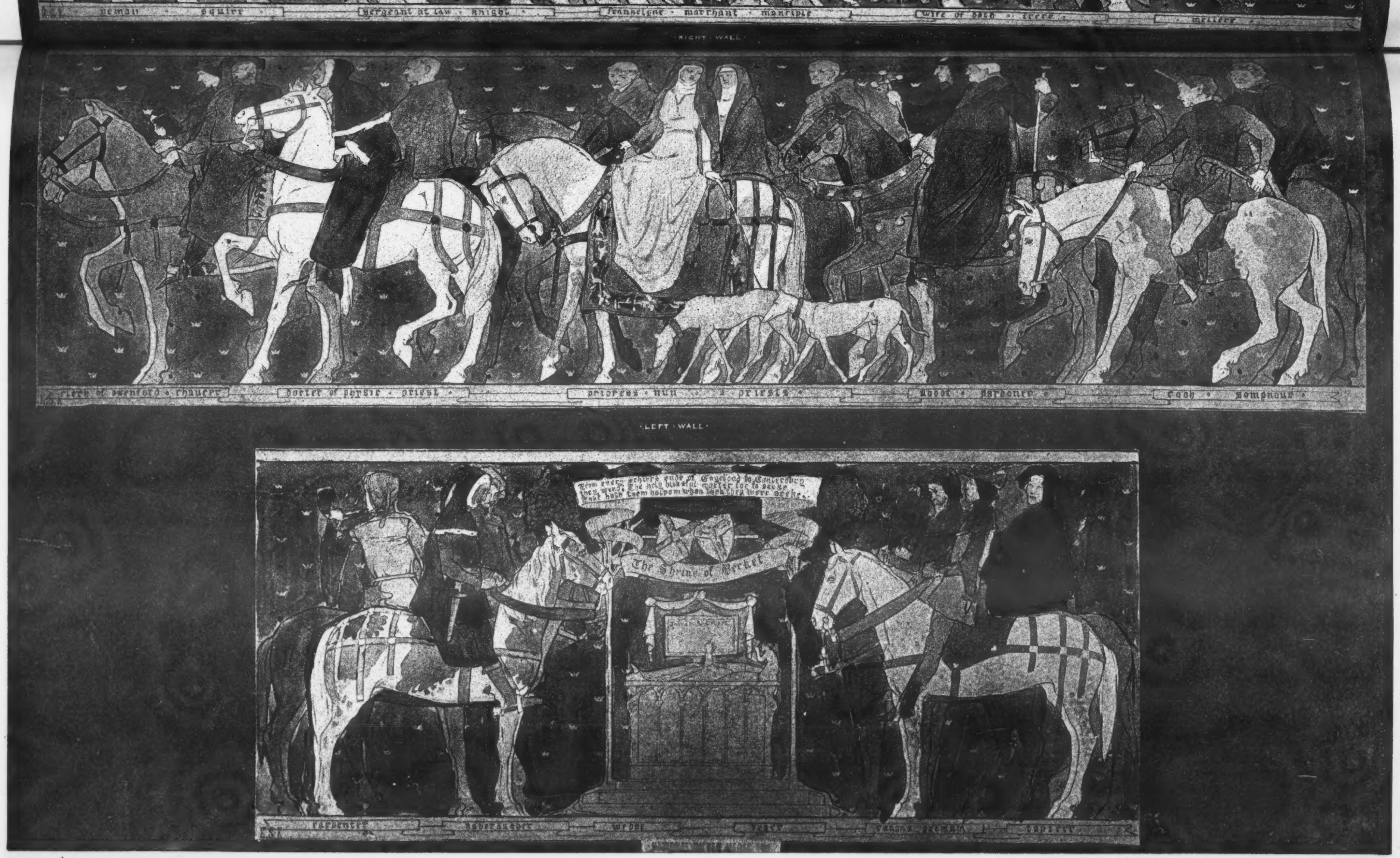
DESIGN FOR A PAINTED FRIEZE, FOR THE DECORATION OF AN ENTRANCE HALL.

SCALE 2 IN TO THE FOOT.



WALL OPPOSITE ENTRANCE

RIGHT WALL



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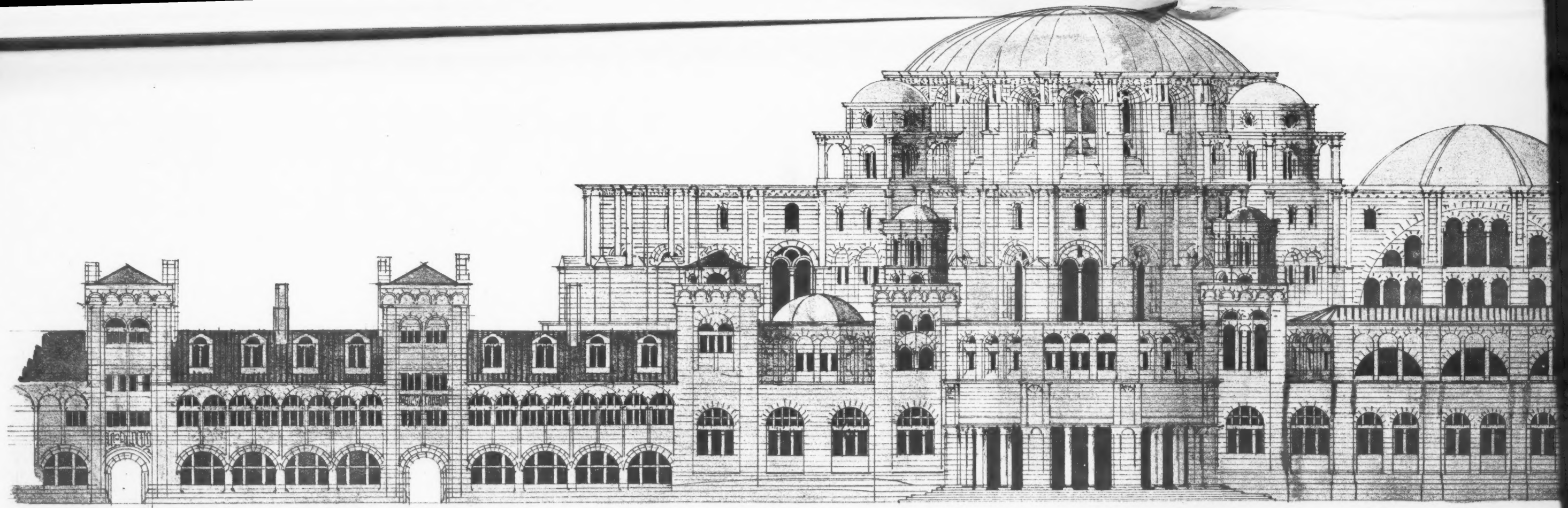
Atrium
Font
Baptistery
Parvise
Parvise
Chancery and Diocesan Offices
Porch
Porch
Narthex
Library
Synod Hall
Nave
Home and Diocesan Chapel
Foreign Missions Chapel
Vestry
Vestry
Vestry
Vestry
Organ Chamber
Organ Chamber
Porch
Porch
Choir
Apse
Sacristy
Chapter House
Vestry
Vestry
Vestry
Vestry
Presbytery
Choir Vestry
Choristers School
Cloister Court
Theological College
Music School
Residences
Episcopal House
Canons
Canons Houses



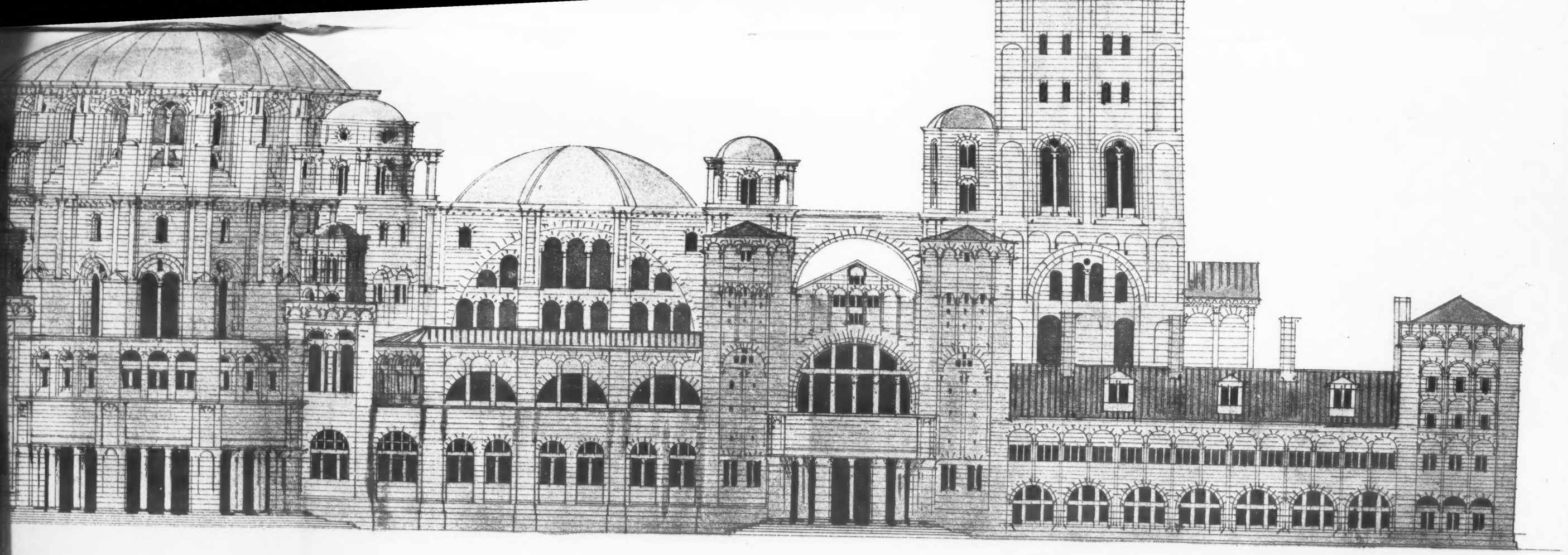
SIDE ELEVATION

SCALE OF 10 5 0 10 20 30 40 50 60 70 80 90 100 FEET

A SKETCH DESIGN FOR A MODERN ANGLICAN CATHEDRAL (No. 53 IN THE LIVERPOOL CATHEDRAL

By Professor Beresford Pite, F.R.I.B.A.

Atrium
Home and English Missions Societies Offices
Chancery and Diocesan Offices
Porch
Narthex
Baptistery
Font
Porch



SIDE ELEVATION

20 30 40 50 60 70 80 90 100 FEET

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ROYAL COLLEGE OF ART
LONDON S.W.

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